Food Culture in the Soconusco Region in Chiapas Mexico

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Abstract

The diverse processes that shape agri-food systems worldwide, such as urbanisation, industrial agriculture and globalisation are creating challenges, pressures and increasing vulnerabilities in rural communities. Therefore, an understanding of the complex relationships between small-scale farmers and the external forces that shape their agri-food systems is essential. The aim of this research is to examine the effects of socio-economic forces on small scale farming systems in Mexico when involved in alternative food networks. To achieve this, the culinary practices and knowledge were explored focused on the analysis of food production, preparation, distribution and consumption practices in households. In addition, the culinary preferences of consumers in a farmers market and its impacts on shifts on culinary practices in small scale farming system were analysed.

The main methodology consisted of photo voice, accompanied by semi-structured interviews, workshops, participant observation in the rural community, and structured interviews with consumers.

The research revealed that female participants voiced the importance of the 'milpa', coffee groves, forest, homegardens as sources of the main food ingredients to prepare daily and special food for the households and regional alternative food network. These culinary practices are rooted in their biocultural 'mam' identity, and a reflection of the Mesoamerican diet. The natural foods based on 'caldos' 'recaditos' and 'tamales' prepared with 'verduras' are bio-cultural markers of communities' identities and their territory.

Finally, the analysis of consumers preferences demonstrates the role of the farmers market in positioning local, 'natural' food in the region. The research evidences the ability of women, seen as agents of culinary knowledge, to create an alternative movement of consumption practices in the Soconusco region.

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Author’s Declaration

I declare that this thesis is a presentation of original work and I am the sole author. This work has not previously been presented for an award at this, or any other, University. All sources are acknowledged as References.

Rosa Elba Hernandez Cruz

Chapter I. Introduction

1.1 Global food production and consumption

Food is not only a part of an economic activity, it is embodied with social, cultural and symbolic meanings (Mintz, 1996; Bertran, 2005). As a social fact it is influenced by diverse factors such as interactions between people, global and local socio economic processes (Bell and Valentine, 1997). According to Fischler (1995) food has both a biological function and an essential social function and Mintz and Dubois (2002) state that eating is the most essential of all human activities, one with which much social life is entwined. In addition, Bertran (2006) states food is a cultural manifestation that interrelates with all aspects of life of a human group, therefore the analysis of how people eat and its determinants helps to understand the diverse processes in which these groups are immersed.

Several major process affect food consumption patterns such as agro industrial food production model, urbanisation (Castellanos and Alvarez, 2010; Nagata et al., 2011), globalisation (Appendini and Quijada, 2016; Ayora, 2017; Wilhelmina et al., 2010). With reference to food consumption, globalisation also promotes tendencies towards alimentary homogenization at the global level, ignoring the different culinary practices and knowledge at the local level of rural populations and encouraging new habits that are more dependent on external inputs and which belong to different life styles (Solís-Becerra and Estrada-Lugo, 2014; Espeitx, 2004). One example of alimentary homogenization is reflected in the limited number of species that support the daily diet of population throughout the globe, based on wheat, rice and corn (Boege, 2008; Solís-Becerra and Estrada-Lugo, 2014). Furthermore, it has been observed that the process of globalisation, as an external force pushes farmers to become consumers of cheap food products produced in others countries while producing products for the international markets (Appendini,García and De la Tejera, 2003). Therefore, Pottier (2016) suggests that the challenge, is to analyse globalization in a contextualized manner, without assuming that the global south is acted upon by the global north.

Additionally, the dominating agro industrial food production model (Meléndez and Cañez, 2010; Castellanos and Alvarez, 2010) encourages more intensive and higher yielding grain and oil seed crops and livestock for meat and dairy, in order to feed the growing urban population (Lang,David

and Caraher, 2009). This model is also known as industrial agriculture (Altieri and Toledo, 2011; McMichael, 2009) and is considered to be a major contributor to environmental problems (Toledo and Barrera-Bassols, 2017), such as ecosystem services reduction and land degradation (García-Barrios et al., 2009).

McMichael (2000) argues that this industrial agriculture model is embedded in the development paradigm and has been promoted by neoliberal policies. He further claims that this model is associated with a deregulation of international commodities markets, led by a few large corporations that control food systems from seeds to supermarkets. In addition, urbanisation also affects consumption patterns, and is considered here as a process of transformation from a predominantly rural-based population to an urban one (Appendini, 2014). Urbanisation could also be associated with dietary trends such as more dependence on processed foods and animal products (Freidberg, 2003).

Despite the fact that there is a dominant agro-industrial model, 50% of the global peasant population depend on traditional agroecosystems, that face continuous economic and environmental change (Eakin et al., 2018; Altieri and Toledo, 2011). In Mexico for instance, over half of its territory is owned by small scale farmers integrated in social farming units ('ejidos' and communities) that produce basic grains such as maize and other staple food (Toledo and Barrera-Bassols, 2017; Eakin et al., 2018). Moreover, there are small scale farmers and resistance movements trying to recover agroecosystems that have been affected by mechanization processes and the use of agrochemicals (Rosset and Torres, 2016; Altieri and Toledo, 2011).

Therefore, in the light of the aforementioned major forces (urbanisation, industrial agriculture, globalisation) that shape agri-food systems globally, it is essential that we comprehend the complex relationship that exist between small scale farmers and the global forces that shape agri-food systems. The many ways in which small scale farmers and farming systems adapt to and mitigate these key forces and the implications thereof can be only understood through exploring the food production and consumption processes. In view of this, it is important to understand the complex relationships through the lens of small-scale farmers' culinary practices, food habits and food-related traditional knowledge. Obtaining a deeper knowledge of culinary practices, their food habits, the relationship that small scale farmers have with their environment, and knowledge associated with food contributes to a better understanding of the impacts that key forces have on farmers' livelihoods. In this research, family farming refers to the ways of organizing agricultural,

forestry, fishery, pastoral and aquaculture production, which is managed and operated by a household (FAO, 2014).

1.2 Research problem and justification of the study

The local productive systems that are the source of food in rural areas are more vulnerable and exposed to urbanization, globalisation and neoliberal policy that tend to drive industrial agriculture and transform the way food is produced and consumed (Appendini and Quijada, 2016; Otero, 2012). As a result, one of the most notable characteristics regarding food system transformation, is the gradual reduction in the relationship between food and agriculture, constituting one of the most important expressions, together with industrialisation, of the changes that have occurred to food systems (Meléndez and Cañez, 2010). Melendez illustrates her point by stating that with regard to much of our food, we have no idea of its origin or how it is prepared.

Other evident examples of these changes are a decline in knowledge and use of local ecosystems and comestible plants associated with a loss or suppression of local species in the diet of rural communities (Solís-Becerra and Estrada-Lugo, 2014). A notable example is a change in consumption patterns during the last three generations in indigenous people from three rural communities of Chiapas, Mexico, as a response to processes of urbanisation. This became accentuated during the last generation due to the fact that consumers here have become more dependent on purchasing food such as eggs, sugar, coffee, salt, maize and beans from outside of their rural communities (Castellanos and Alvarez, 2010). Bertran (2017) argues that the process of urbanisation is influencing the food culture of communities, for example households adapt and incorporate new recipes that they have observed on television exemplifying that rather being passive subjects of globalization, households are active social actors with limited social and economic resources.

Thus, the study of culinary practices (production, preparation, consumption and distribution) in rural communities is important when trying to gain an insight to the responses of households when exposed to larger social and economic processes that continuously shape local and global agri-food systems, including alternative food networks for organic production. In this research, culinary practices, as part of the anthropology of food framework, are analysed by focusing on how food is produced and sourced, distribution of food strategies in the households and market as well as preparation and consumption practices.

Caplan points out that “we need to understand not only the historical, social and cultural contexts but also the many layers of knowledge and meaning held by different subjects in relation to food and eating” (1997, p.25). Food is associated with history, with who we are and where we belong to, namely with our identity (Meléndez and Cañez, 2010).

Additionally, there is a need to identify the different processes and practices associated with food production, consumption, preparation and distribution at the local and regional level in order to gain an understanding of constraints and strategies of rural households. Mexico is the origin of the domestication of maize and other crop species, that have been the staple food of rural communities for hundreds of years (Boege, 2008; Lerner,Eakin and Sweeney, 2013). Mexico is also a repository of over 65 races of maize that are the result of the millenarian coevolution between the cereal and indigenous people and peasants (Toledo and Barrera-Bassols, 2017). Chambers and Momsen (2007) argue that diversity in agricultural crops is important for food security, currently many areas considered centres of crop domestication and diversity are experiencing rapid changes in agricultural systems, leading to a loss in crop varieties and the autochthonous knowledge and practices that sustain them. Boege (2008) further mentions that agrobiodiversity reduction could lead to negative effects in human diets due to a loss of food diversity. Therefore, it makes sense for farmers to maintain traditional knowledge about their land, crop races and practice saving and sharing seeds (Bellon et al., 2018).

Within the Mexican context, the domestication of plants, especially those used for consumption, is believed to develop from the interaction of three spaces according to Boege (2008). These spaces include the intervened natural area, the homegarden and the ‘milpa’. This domestication process has derived in the diversity of species, varieties and regional adaptations of a wide range of plants used in the food production system, widely known as agrobiodiversity or domesticated biological diversity (Boege, 2008).

The small-scale productive system called ‘milpa’, is an ancient Maya mode of shifting cultivation, comprising a maize plot which also produces beans (*Phaseolus vulgaris*), squash (*Cucurbita pepo*), edible plants and fruits. The ‘milpa’ has acted as the principal subsistence productive system for indigenous groups of the southern part of Mexico during thousands of years (Mariaca, 2015; Rodriguez-Moreno, 2013).

Rural homegardens, consist of fruit trees as well as comestible, ornamental and medicinal plants that are all grown around the family residence and whose composition partly depends on household structure (Mariaca, 2013). The homegarden comprises three components; the human: the family that manages it; arboreal plants; and the animal component: integrated by domesticated and wild animals (Mariaca, 2013). Homegardens in Mexico have several significances; Boege (2008) mentions that the indigenous people symbolically view these areas as where the people govern, whereas the 'milpa' is a space for the interaction between humans and nature's masters, a place where people have to give in order to receive. For Christie (2004) homegardens are the domain of women and, at times, community space; thus, for the purposes of this research, a more profound knowledge of the meaning and importance of these spaces for culinary practices in rural households is essential.

In 2010 UNESCO declared traditional Mexican cuisine as an intangible cultural Heritage of Humanity and this has been used as a mechanism to promote 12 regional cuisines in the tourism industry (Thomé-Ortiz and Jesús-contreras, 2016). Ayora (2017) argues that the inclusion of the traditional cuisine based on pre-hispanic ingredients (maize, beans and tomatoes) could reduce the diversity of regional cuisines in Mexico. Alternatively, the entry of food cultures into heritage frameworks has enabled practices of reconfigurations in the role of different actors in the food cultures. For example Matta (2019, p.17) argues that the identity of the 'cocinera tradicional' a market oriented version of the customary, traditional cooks, in the state of Oaxaca, "has been ascribed with heritage value and cultural and symbolic capital in order to be propelled into an arena of competition determined by tourist demand. Consequently, it is important to focus on the study of culinary practices to provide evidence of the particularities and the role of actors in different bio cultural regions in the southern part of Mexico.

1.3 Aim and objectives

Based on the importance of agroecosystems for traditional cuisines and the evidences of different factors affecting food production and consumption practices at different levels, the aim of this research is to examine the effects of socio economic and market forces on small scale farming systems in Mexico when involved in alternative food networks. To achieve this aim, the following objectives were defined:

- To examine culinary practices and knowledge in small scale farming systems when involved in alternative food networks.

- To explore the culinary preferences of consumers and its impacts on shifts on the culinary practices on small scale farming systems in the Soconusco region of the state of Chiapas, Mexico.

1.4 The thesis structure

In the introductory chapter the research problem, the justification and the aim and objectives of the research are presented. In chapter II, the literature review is discussed. Chapter III describes the framework and the methodology of the thesis. Chapter IV focuses on exploring how rural communities associated with an alternative food network system (i.e Organic farmers' market) develop their culinary practices, and whether the social processes influence or reinforce the culinary practices.

Chapter V analyses the consumer's preferences towards food and the relations between actors in the 'Tianguis' as a social space. Finally, in Chapter VI a general discussion and conclusion on the core research aim of the thesis is provided.

Chapter II. Literature Review

2.1 Introduction

In this chapter, the literature that contributed to the construction of the key objectives of the study are discussed in detail. The impact of neoliberal policy on the food production system in Mexico is discussed, followed by an analysis of the impacts of urbanisation on consumption practices. Furthermore, the alternative food production movements in Mexico are contextualized in order to justify the need of research on culinary practices in rural contexts.

2.2 Food production in Mexico as response of the neoliberal policy

The Mexican countryside has undergone drastic changes in the forms of production and commercialization as a result of neoliberal policies. For example, Rubio (2009) points out that conditions were created for the positioning of a small group, around 20 transnational companies to take control of the production, marketing, distribution and transformation of farm products. An example of the neoliberal policy is the North American Free Trade Agreement (NAFTA), commenced in 1994 and included Mexico, United States and Canada. This free trade agreement have led to a decrease in agricultural production deepening food dependency and weakening food sovereignty (Cabrera, 2015; Rubio, 2009). Furthermore, NAFTA has resulted in a speeding up of the liberalization and free trade program, in addition to the gradual marginalization of the state as an intermediary between powerful actors such as transnational corporations and actors in more local and regional arenas (Lind and Barham, 2004; Cabrera, 2015). Appendini (2014) argues that after 1990, policy intended to diminish the role of the state and increase the agricultural efficiency (promoting new technologies and crop conversion) by moving small scale farmers out of production and supporting agribusiness rather than production food staples. One consequence has been the highly disproportionate amount of private and public investments in the northern states of Mexico while most support for farmers in the southern parts of Mexico has been through social subsidies (McCune et al., 2012).

Another major change resulting from neoliberal policy was the reform in the Article 27 of the Mexican constitution. After the 1910 Mexican Revolution, a programme of land distribution and the right to land for Mexican farmers was developed (McCune et al., 2012). This right to land was an entitlement until 1992 when the Art. 27 of the Mexican Constitution was reformed (Eakin et

al., 2014). This change encouraged privatization of collective land 'ejidos[1]' and allowed the farmers to give away their land for sale or rent (Taylor and Zabin, 2000; Fitting, 2006) to the private sector (Fitting, 2006). The reform to this article was one of the main causes of the Zapatista armed uprising in Chiapas in January 1994, since these reforms annulled the possibilities of the indigenous people to possess land (Ramos, 2006).

2.2.1 Impacts of neoliberal policy on maize production

Under the scenario of neoliberal policy Mexican maize farmers have been affected by US and Canadian farmers who receive more subsidies for agriculture activities; in addition they receive more technical support and can therefore sell corn at cheaper prices, even lower than the cost of production (Pascual, 2003; Cabrera, 2015). One of the most important effects of NAFTA in Mexico was the increase in maize imports from the US (Fitting, 2006). Mexican transnational company, such as Maseca, the biggest maize importer in Mexico, have made considerable profit from market liberalization (Rubio, 2008; Torres, 2003; Lind and Barham, 2004). Maseca (transforms maize into flour for the tortilla industry) controls 71.2 % of the maize flour in Mexico followed by Minsa with 23.5 % (Appendini and Quijada, 2016).

As a result, there is a nationwide distribution of industrialized tortillas produced by small-mechanized tortilla makers with maize imported from the US and a decline in the availability of locally produced food (Nigh and González, 2015; Fitting, 2006). García-Barrios et al. (2009) notes that after the introduction of NAFTA, in some small communities in Chiapas smallholder farmers had reduced maize production to subsistence levels and there has also been an increase in migration to the US with remittances often used to clear land for cattle production. However, despite neoliberal policy "designated to eliminate smallholder maize producers, these farmers not only persist but demonstrate vitality and dynamism" (Eakin et al., 2014, p.138).

Studies by Appendini (2014), Appendini and Quijada (2016) and Sweeney (2013) all argue that in rural communities, smallholder farmers continue to grow maize for household consumption. Furthermore, if they have the resources to cover inputs, they would prefer the local, white and native varieties than the imported yellow corn hybrids. In addition, maize production plays an important role in household livelihood strategies and food security (Eakin et al., 2015). This

[1] The 'ejido' is a land tenure system or a form of collective property integrated by small scale farmers with internal political structures (McCune et al., 2012).

practice reinforces the fact that some rural communities still adhere to certain traditional practices such as preparation of handmade tortillas made from maize landraces (Cárdenas et al., 2019).

Thus considering the above aspects such as drastic changes in food production policy and the diminishing of maize production which may have implications on rural livelihoods and food production patterns in rural communities, it is important to examine the different responses of rural households to market forces that promote changes in food production and consumption practices at the local level.

2.2.2 Impacts of neoliberal policy on the Mexican coffee sector

The coffee sector being impacted by the economic process in the southern part of Mexico is another interesting example of the neo-liberal policy. Coffee growers, in Chiapas, Veracruz, and Oaxaca, are in general small scale farmers, with most of them indigenous people with no more than 5 hectares per household (Renard, 2010). During the 70s and 80s coffee was the most important agricultural export commodity in Mexico (Nestel, 1995).

Small scale coffee farmers tend to participate in plural economies, whereby farmers manage their agroecosystems for both subsistence production and for local and global markets (Fernandez,Mendez and Bacon, 2013). These farmers are very much dependent on external economic forces that are out of their control, predominantly the world coffee price, therefore changes in the world market have resulted in numerous coffee crisis (Lin,Perfecto and Vandermeer, 2008). In order to provide a buffer against market risks and environmental change, many farmers have tried to diversify their productive activities, such as engaging in ecotourism or other alternative agricultural activities (Schroth et al., 2009, p.608; Barrera,Herrera and Pohlan, 2016) or migrating to find employment in nearby urban areas (Bacon, 2005). In the Soconusco region in Chiapas, coffee farmers have traditionally depended on farm labourers from Guatemala, particularly during the harvest period, but with the current coffee crisis labourers are also migrating to the US (Renard, 2010).

2.3 Food production and urbanization

Appendini (2014) views that over the last twenty-five years, Mexico has undergone rapid urbanization associated with high rural-urban migration motivated by a non-farm labour strategy. Appendini (2014) also argues that this transformation from a predominantly rural-based population to an urban one has resulted in a change in patterns of consumption in the urban areas

with an increase in meat and animal products as well as a decrease in household's consumption of tortillas. Fraga and Arias (2015) argue that rural to urban migration could lead to the abandonment of 'milpa' and changes in food habits. This has occurred in the Yucatan Peninsula where farmers have migrated to areas dominated by the tourist industry such as Cancun and the Riviera Maya. Caballero, Cortes and Martinez Ballestle (2010) mentioned that the urbanisation processes has affected the home gardens leading to a reduction of labour invested in farming activities. Salazar and Magana (2016) argue that the increase in non-farm income also increases food dependency from outside markets and a loss of diversity in the traditional systems such 'milpa' and homegardens. Consequently, it is important to analyse food production and consumption practices in rural contexts where food is produced to understand how household's respond when besieged by external forces such as globalisation and agro-industrial food production.

2.4 Food consumption: dietary transformation in Mexico

Currently, obesity is considered one of the most important health problems in Mexican society (Ferguson et al., 2012; Bridle-Fitzpatrick, 2016; Mundo-Rosas,Shamah-Levy and Rivera-Dommarco, 2013). Dietary transformation over the past 25 years (Bridle-Fitzpatrick, 2016; Clark et al., 2012) has resulted in a prevalence of obesity. In 2013, the FAO ranked Mexico as having the highest obesity rate in the world, ahead of the USA, blaming increasingly industrialized agricultural production for a worldwide epidemic of both obesity and malnutrition (FAO, 2013).

Changes in Mexican food consumption patterns have been associated with the NAFTA policies (Clark et al., 2012) resulting in a diet increasingly dependent on industrially produced foodstuffs. For example, the implementation of NAFTA allowed an increase in ready to eat products from the US to Mexico as well as rising levels of foreign direct investment from US corporations in the Mexican food supply chain (Clark et al., 2012). As a result, there has been a significant increase in the consumption of soft drinks and snacks with high sugar contents in rural and urban areas (Colchero et al., 2017; Bertran, 2017; Mundo-Rosas,Shamah-Levy and Rivera-Dommarco, 2013; Suárez,Morales and Gálvez, 2013). The high consumption of soft drinks has been linked to the prevalence of diabetes in the highland region (Tenejapa, San Juan Chamula and San Cristobal de las Casas) of Chiapas. Page-Pliego (2013) argues that there are circumstances that have favoured the access and consumption of soft drinks, for example one of the biggest coca cola bottling plants is located in San Cristobal, (a city which is the centre of a region predominantly

inhabited by indigenous inhabitants), resulting in the efficient distribution and monopoly of these soft drinks and also leading to water scarcity in the area. Page-Pliego further argues that the extent that Coca cola has infiltrated local communities could not be exemplified more than its consumption in syncretic Mayan rituals, substituting the traditional alcoholic drink called 'pox'.

Other scholars, for example Perez et al. (2012) have argued that the availability of funds from government programs or from remittances are probably primary factors motivating the consumption of industrialized food which was recorded even in households that retain their traditional activities such as the cultivation of 'milpa' or production in the homegarden. Social programs that aim to alleviate poverty thorough conditional cash transfer such as 'Prospera' in Mexico's rural, semi urban and urban areas provided (until 2018) cash directly to women (mothers) beneficiaries who received fund in three main pillars, health, nutrition and education (Gil-García, 2016). In addition, Garcia-Parra et al (2015) argue that the programs 'Prospera' (before 'Oportunidades' and 'Progresa'[2]) haven't achieved their nutritional objectives and perhaps have increased the prevalence of overweight and obesity in rural communities of Chiapas.

In 2012, two thirds of adults residing in rural areas (66%) were classed as overweight or obese and in these areas the consumption of soft drinks and high energy food is high (Colchero et al., 2017). Another common denominator in these rural areas is a high level of poverty among the indigenous population; 71.9% or 8.3 million inhabitants were classed as in poverty in 2016 and 3.2 million (28.0%) did not have the economic means to acquire basic foodstuffs (CONEVAL, 2018).

It is therefore evident from the above discussion that different processes at macro levels have affected production and consumption practices; hence, it is necessary to analyse culinary practices and knowledge in rural communities when exposed to wider socioeconomic processes. The research looks at two different levels in the Soconusco Region, in Chiapas, Mexico. Households that are involved in alternative food production for an organic farmers market and consumers of the organic farmers market or 'Tianguis'. Following this, the next two section will analyse the context of alternative food production movements.

[2] 'Oportunidades'(1997-2001), and 'Progresa' (2002-2014) were social programs or subsidies to combat poverty in Mexico

2.5 Market forces and food production: contextualizing the alternative food networks in Mexico

Alongside the rapid developments of technology for food production associated with globalisation and industrialization there is an increase in critiques to the ways that food is provisioned (Kneafsey et al., 2008). Thus, there are different processes, social actors and movements trying to approach in different ways how food is provisioned and consumed. Tregear (2011) argues that these movements and organisation processes could be described as rooted in different forms of production, counteractive to the conventional agri-food system. These movements are considered as alternative food systems (Bellante, 2017; Tregear, 2011; Bos and Owen, 2016). Dubois (2018) also argues that the emergence of alternative food networks contribute to the recreation of place and the re-embeddedness of farming practices on the social, ecological, economic fabric of particular places.

In these alternative food networks, social embeddedness is rooted in personal trust, relations of reciprocity, and solidarity (Thorsøe and Kjeldsen, 2016; Dubois, 2018; Tregear, 2011). Alternative food networks are also said to have the potential to enhance redistribution of value for producers and propitiate sustainable food production (Michel-Villarreal et al., 2019). Thorsøe and Kjeldsen (2016) argue that the term alternative refers how these networks are seen in relation to the mainstream industrialised forms of production. Thus, alternative food networks foster closer and more direct links between producers and consumers and spatial proximity between them (Jarosz, 2008; Blumberg, 2018).

The many forms that alternative food networks could take in contemporary food production processes include farmers' markets, farm shops, community supported agriculture, box delivery schemes, producers and consumers cooperatives (Bos and Owen, 2016; Dubois, 2018). Bos and Owen (2016) argue that interest in research and policy making circles has increased in recent decades due to the consumers reactions to a range of environmental, ethical and health concerns associated to the conventional food supply systems that are increasingly more industrialized.

Globally, Mexico is one of the most important producers of organic coffee and the state of Chiapas occupies top position in the production of organic coffee (Jurjonas et al., 2016), particularly the Soconusco region. The production of organic foodstuffs has been accompanied by relevant legislation and norms for production and commercialization (Roldan et al., 2016; Bara et al., 2018) demanded by buyers of international markets (Gómez Tovar et al., 2005). The third party

certification given for Organic Certifications organizations such as Organic Crop Improvement Association (OCIA) or Naturland, and accreditation by the International Standards Organization (ISO) (Nelson et al., 2010) are some examples of the increasing legislation for organic food production.

Parallel to organic food production that is generally sold in international markets (Roldan et al., 2016; Gómez Tovar et al., 2005) there is a small scale system based on agro ecological practices considered an alternative movement that stimulates internal consumption and the production of small-scale organic or agrochemical-free food (Altieri & Toledo 2011). These movements, integrated by diverse organizations and distinct sectors such as cooperatives, farmers, universities, NGOs, aim to "vindicate the cultural value of food in terms of taste, its conditions of production and its ecological and cultural dimensions as part of landscape that supports the economy of smallholder family" (Nigh and González, 2015, p.322).

Further, the movement of the international peasant organization La Via Campesina also promotes agro ecological production as a key element in the process of re-peasantization in rural areas (Rosset and Torres, 2016). La Via Campesina is considered a resistance movement against industrial agriculture and neoliberal policies that argues that food production must remain in the hands of small scale farmers (Altieri and Toledo, 2011). La via Campesina proposed food sovereignty and the most widely used definition is the one from the declaration of Nyeleni at the forum in Mali in 2007.

> "Food sovereignty is the right of peoples to healthy and culturally appropriate food produce through ecologically sound and sustainable methods and their right to define their own food and agriculture systems. It puts those who produce, distribute and consume food at the heart of the food systems and policies rather than the demands of markets and corporations (Nyeleni, 2007, p.8)".

Under the agroecological movement one of the key drivers of the success of the agroecology practices has been the constructivist teaching and learning processes that promote the active inclusion of traditional and local knowledge, for example farmer to farmer methodology (Mier y Terán et al., 2018). Martinez-Torres and Rosset (2014) also argue that 'dialogo de saberes' dialogue of knowledge has contributed to the promotion of agroecology in alternative movements. Understanding the dialogue of knowledge as a reflective praxis that aims to build respectful and non-asymmetric scenarios (Argueta and Perez, 2019). Dialogue of knowledge is based on the

premise that significant knowledge is constructed through social interactions (Ferguson et al., 2019).

Another strong movement in Mexico such as 'Sin maiz no hay pais' movement initiated by communities, civil society and, academics express rejection of industrialized agriculture, transgenic biotechnology and highlight the struggles of indigenous communities for achieving food sovereignty (Toledo and Barrera-Bassols, 2017).

At the national level, the Red Mexicana de Tianguis[3] and Mercados Orgánicos (Mexican Network of Farmers and Organic Markets) have been at the forefront of the alternative movement (Nelson et al., 2016, 2010; Gutiérrez-Pérez,Morales and Limón-Aguirre, 2013). These farmers markets are also known in the literature as part of the alternative food networks umbrella (Bellante, 2017; Michel-Villarreal et al., 2019; Nigh and González, 2015).

Altieri and Toledo (2011) argue that agro-ecological initiatives aim to transform industrial agriculture towards an alternative agricultural paradigm. Evidence from Mexican Network suggests that there are more people actively involved in trying to produce and consume food products derived from agro-ecological food systems. The Mexican Network of farmers markets started in 2004 with 4 markets (Bara et al., 2018). Currently, there are more than 28 farmers markets in 15 cities throughout Mexico (Rueda et al. 2016).Two of these markets are located in the state of Chiapas, one in San Cristobal de las Casas, and one in Tapachula 'Tianguis de productos naturales y organicos el Huacalero'.

For Escalona (2009) cited in Nelson et al. (2016) farmers markets are public spaces, accessible to all in which producers offers food that they have produced using clean techniques or food that are in transition toward organic food. It has been argued that farmers markets are socio-environmental innovations spaces that have promoted organization processes between social actors such farmers and consumers, creating new social relations within their territory (García,Rappo and Temple, 2016). These characteristics resonate with the practices of reconnection discussed by Kneafsey et al. (2008). They argue through different study cases the evidence of consumers and producers in

[3] In Mexico, the word 'Tianguis' originates from the Nahuatl language spoken by the Aztecs, an ancient Mesoamerican civilisation in the central region of Mexico, and means market. It is used to refer to the itinerants markets in the urban areas where people can find diverse products (García,Rappo and Temple, 2016)

trying to reconnect with each other and with food, through engagement of more direct relationships.

The farmers markets in Mexico tend to use participatory guarantee systems to certify the small scale organic production (Nelson et al., 2016). Contrary to the third party certification, organic farmers markets have their own participatory guarantee system because third party certification can be inaccessible for smallholders (Nelson et al., 2016; Kaufmann and Vogl, 2018). Organic certification from a mainstream agency could be inaccessible because small scale farmers must go through an expensive and lengthy process that could last as long as three years (Nelson et al., 2010).

However, within the participatory guarantee at local level, a committee manages the certification process in each farmers market. The committee is integrated by producers, consumers and others actors who volunteer their time to collectively carry out the certification using the Mexican Network standards as a guide (Nelson et al., 2016; Bara et al., 2018). Other farmers markets are following their own guidelines adapted to the local conditions and characteristics as is the case of the Farmers Market in San Cristobal de Las Casas, also in Chiapas (Gutiérrez-Pérez,Morales and Limón-Aguirre, 2013).

In several farmers markets of the Mexican Network the participation of women has been prominent as producers, processors, organizers and promoters of the movements (Nigh and González, 2015). Farnworth and Hutchings (2009) argue that sustainable farming systems should contribute to women's empowerment and enable them to participate on leadership functions. However, they add that there is a lack of adequate attention to gender issues within the organic and sustainable agriculture movement.

It has been argued that women's participation in small farming systems (immersed in a patriarchal system) has been considered as a collaboration to the households reproductive activities, therefore the labour undertaken by women has been invisible, without remuneration (Chiappe, 2018). Moreover there are contradictions in the private sphere of women that are reflected in the agrifood systems, for example, women perform the majority of food related work but they control few resources and hold little decision making in the agrifood system (Allen and Sachs 2007). Therefore, it is important to examine women's participation in food production for alternative food networks and their ability to shape new food systems.

It has been argued that farmers markets also promote opportunities for consumers to acquire fresh, local, healthy food, although there is still work needed regarding food safety and hygiene (Gutiérrez-Pérez,Morales and Limón-Aguirre, 2013). In this context, other scholars mention the concepts of local, nostalgia, ethics linked to food products, nevertheless these not been explored further (García,Rappo and Temple, 2016; Gutiérrez-Pérez,Morales and Limón-Aguirre, 2013). Within this context of the research, it is important to explore how rural communities associated with an alternative food network system (i.e Organic farmers' market) develop their culinary practices, and whether the socio-economic processes influence or reinforce the culinary practices. In doing so the thesis contributes to understand the effects of socio economic forces on small scale farming system in Mexico.

Chapter III. Framework and Methodology

3.1 Anthropology of food and food studies

Inspired by the work of anthropologists, the framework adopted in this research draws on the main concepts of the anthropology of food. Gracia (2010, p.366) defines the anthropology of food as a science that "places special attention on ecological, sociocultural, economic and philosophical factors that influence food selection while taking into account other existing biological and psychological ones, all of which interact". Contreras and Gracia (2005, p.96) state that the anthropology of food also covers the analysis of food culture, defined as "the group of representations of beliefs, knowledge and practices inherited or learned that are associated with food and which are shared by individuals of a given culture or a determined social group within a culture".

While the anthropology of food is defined as the analysis of food culture, Garine (2016, p.74) identifies food as research field situated between the limits of nature and culture, hence making possible to document for example the botanic identification of a plant that serves as food and its transformation through the culinary process, consumption, social and religious uses in a specific social group.

Klein and Watson (2016), further are of the view that food could reflect the warmth of human bonding and the strength of kinship in societies. Mintz (2008) claims that food is associated with identity and Vallianatos and Raine (2008) and Abbots (2016) are of the view that food can create a sense of belonging and reiterate affiliations and connections to home in migrants contexts.

It should be emphasised that food processes are not static. For instance Mintz (2008, p.517) states "when food objects, processes, spread from one society to another, the receiving society is likely to modify, often misunderstand and usually redefine what it has received"; stressing the importance of focusing on the analysis of food processes at local and regional levels to understand the different dynamics at play.

3.2 The anthropology of food in the study of contemporary food topics

It is important to note that the intention in this literature of anthropology of food review is not to provide a detailed overview of the literature but instead an exploration of the topics related to the present research.

De Garine (2016); Mintz and Dubois (2002) claim that the study of food has been an important research topic for anthropologists. The pioneering ethnography that remains the model for the field is the study on food undertaken by Audrey Richards in 1939, Land Labour and Diet in Northern Rhodesia (Mintz and Du Bois, 2002) in addition to the research on food carried out by Mary Douglas in 1966. More recently, Mintz and Du Bois (2002) assert that research by Jack Goody that led to the publication of the book Cooking, Cuisine and Class in 1982 initiated a new era of research on food.

Food has been considered by scholars as a "cornerstone of culture and social organization" in different societies (Klein and Watson, 2016). Sutton (2016) states that through the anthropology of food, different areas such as food and identities, food and memory have been researched. Recently, food anthropology has engaged in more global themes such as food safety, food quality, food abundance generating new pathologies such as obesity or food deficiencies in everyday life consumption. Anthropologists have also focused their research on the analysis of the spread of the industrial model, globalisation and localisation (Fumey,Jackson and Raffard, 2016), food justice, food insecurity (Pottier, 2016), agency and gender (Counihan and Kaplan 1998; Pilcher 1998), food and migration (Abbots, 2016), among other relevant topics.

Approaches to food studies have also focused on rituality and culinary practices in indigenous communities (Katz, 2013). For example, Katz (2013), in her analysis of food rituals carried out by the Mixteco indigenous communities of Oaxaca, Mexico, highlights the significance of maize and the respect that individuals have for this staple crop, she insists on a relationship of respect with maize that dominates household food, establishing a profound relationship and ritualization between this plant and the individual; therefore, household food is not a separate field from festive food but both are an expression of a relationship with the elements of nature (Katz, 2013).

More recently, according to Klein and Watson (2016) anthropologists have started to focus on problems of contemporary food systems such as meat production and consumption, vegetarianism, controversial topics such as genetic modification of food ingredients, organic food production and consumption, food heritage, etc.

Food heritage is another topic researched by anthropologists. As explained by Mata (2013) which comprises of a set of material and immaterial elements of food cultures that are considered a shared legacy or a common good. In the heritagisation of food arena Matta (2013) mentions there

are some examples in the tourism sector such as gastronomic routes or on a more global scale, the exportation of organic products or projects of national cuisines such as French, Mexican or Peruvian cuisines.

For Bessiere, heritage is linked to social memory which preserves the cultural and social identity of a community (2013, p.277). In this order of ideas, food heritage is linked to terroir, which delineates a territory where production can take place, and is connected to the memories of a community, meanings and representations that belong to a social group (Bessière, 2013, p.281).

There are several examples of the results of heritagisation processes in diverse countries. For instance, it has been observed that the countryside could be pressured by the demand of the city and transform the local landscapes and agroecosystems that supply the local markets, such as the case of olive oil production for external markets in Mediterranean countries, a result of heritagisation of the diet in this region (Truninger and Freire, 2014).

3.2.1 Food security

The 2009 declaration of the World Summit on Food Security reaffirmed the definition of food security declared in 1996, as "when all people, at all times have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (CFS 2012). This definition has been identified with four dimensions, availability, access, stability and utilisation.

Food studies have focused on topics such as food security which has predominantly been studied from the food system approach including in the analysis the actors and stakeholders at different levels, particularly at the regional level (Ferguson et al., 2012). However, research on more local processes related to food production and food security are important, thus some anthropologists have focused the analysis on food production in order to achieve food security in different rural and urban contexts.

Through ethnographical studies, Pottier (2016) concludes that women's control of household's budgets in rural contexts is crucial for food security and for biodiversity conservation. From a feminist standpoint theory Bee (2014) argues that for example women's responsibility of gathering and cooking 'quelites', shape their practices and views of food security in the face of drought in rural communities in Mexico. Thus (2014) Bee further argues that women's productive and reproductive roles contribute to the availability of important source of nutrition during

adverse conditions. Ferguson et al (2012) add further that it is relevant to focus the analysis on land tenure and agrarian reform to understand food security.

In order to understand food insecurity Pottier (2016, p.163) asserts that anthropologists should research the structural constraints that result in food insecurity for farmers and their resilience without over celebrating human agency and inventiveness".

In migration contexts from the rural to urban areas in Africa, Pottier (2014) analyses through ethnography the diverse strategies set by households in order to cope with hunger in certain periods. Some of these strategies include reducing food intake, sending their children to the farms, earning extra cash income, and storing home grown maize for consumption during the hunger season.

In another context and with the help of qualitative methods such as photovoice Lardeu, Healy and Ford (2011) examined the experience of food insecurity among the Inuit users of community food programs in an urban area in Canada. They found that the high cost of farm foods limits the ability of participants to eat what they really wanted; however, the food sharing networks within the community can help food security.

3.2.2 Cooking: gender, power and identity in the households

Anthropological research on food, with emphasis on ethnographies has also focused on topics such as empowerment and agency (Counihan, 1999; Pilcher, 1998). Counihan (1999) argues that providing food for their families is one of the main gender roles of women around the globe. Cooking has been the domain of women and key skills, traditional knowledge about food is passed on from the mother to the daughter so they can be seen as the source of culinary knowledge though this may not be valued much in patriarchal societies.

Empowerment has been defined as the expansion of people's ability to make strategic life choices through three dimensions, resources, agency and achievements, thus refers "to the processes by which those who have been denied the ability to make choices acquire such an ability" (Kabeer, 2005, p.13). Food studies scholars have contrasting ideas on whether food work gives women power in the family or reinscribes their subordinate gender role (Allen and Sachs Carolyn, 2012). De Vault (1991) argues that the kitchen has been considered as an oppressive space that limits women's ideological, social and economic freedom.

Appadurai (1981) furthers discuss that in the kitchen, women frequently privilege the tastes of other family members. In similar vein Vallianatos and Raine (2008, p.362) argue that "deference to others particularly husbands, reflects cultural constructions of gender and power". Counihan (1999) provides and explanation that food displays practices in the households through which unequal gender power is acted out, resisted and reproduced.

However, food could be also a powerful channel to create influence and exert influence in the households. Counihan (1999) asserts that Florentine informants (women) feed their husbands and children in return for love, favours, good behaviour and the power that comes from being needed. Counihan (2008) also argues that for women cooking food could be simultaneously oppressive and a tool to acquire agency. She notes that cooking as a reproductive activity within the households could be oppressive for some women, whereas cooking for an income could be a way to gain economic power.

Gvion (2012, p.72) however argues that even though food, through cooking enables women to exercise authority in the home, in the Palestinian households context, "it has not became a lever for redefining their roles or the system of family power relations". Resonating with Vallianatos and Raine (2008), Gvion (2012, p.74) asserts that "women choose to cater the menu to the tastes of their husbands or grown sons, sometimes suppressing their own preference".

Furthermore Gvion (2012, p.85) states that "activity in the communal domain replicates domestic tasks in a setting outside the home, and in doing so it leaves women little time to ask questions about their lives as women and about the possibility of changing the system of family roles and power relations".

Som-Castellano (2015) argues that when women perform acts of food provisioning such as planning meals, food preparation, and cleaning up after meal they are engaging in traditional feminine tasks, reinforcing ideological assumptions about who should be doing such work, reproducing gender inequality in their households.

Moreover, in patriarchal systems, the division of work based on gender roles as a social construction assigns women domestic activities, care work, that are both non-remunerated and largely unrecognized, while men are the economic providers and household heads (Vázquez et al., 2020).

By contrast, Adapon (2008a) asserts that cooking, seen as a culinary work of art, provides women in Milpa Alta, Mexico the legitimacy to expand their social and physical boundaries, forms of autonomy, morality and domestic power.

Moreover it has been argued that cooking and thus "the kitchen, as a women's space, have the potential for the transmission of personal and family histories, and part of the processes of creating and reproducing ethnic and national identity" (Sutton, 2016, p.355). Not only tools but techniques and recipes can serve as cultural artefacts that represent identity.

Therefore, it is important to understand the processes around food production, preparation and consumption in rural households in order to argue possible reconfigurations or renegotiations of gender roles and the ability of women to give their voice and construct agency through food. How do women and men negotiate responsibilities for food provisioning and distribution in the new arena such as the farmers market?

3.2.3 Knowledge and Agency

As part of anthropological studies, recent analysis has been carried out on the role of knowledge in food production and consumption practices. For Abbots (2017, p.16), knowledge includes understandings, conceptions and meanings of food. She stresses that food does not travel, in the broader sense, alone but "instead comes to us entangled within multiple relations, symbolic meanings and a myriad of understandings".

Gvion (2012) in her book Humus and Falafel analyses Palestinian cuisine in Israel and the social practices and narratives involved in cooking; she emphasizes the theoretical and practical knowledge of cooking and the importance of women as agents or purveyors of culinary knowledge in the domestic sphere. Culinary knowledge in her work includes for example techniques in cooking, ability to select ingredients, knowledge and at a technical level includes proficiency in the techniques of cooking, storage, ability to select ingredients such as vegetables for cooking and the use of technology.

Understanding agency, as the capacity to affect change, thus for Abbots (2017, p.21) "agency becomes understood as relational, continually produced through dynamic interplays and interactions, and distributed across ever shifting heterogeneous networks of people, matter and knowledge". Based on the Actor Network theory (ANT) from Latour, Abbots (2017, p.25) discusses the agentic capacity of non-humans or non-human actors. Thus, culinary knowledge is

information that is not just moved around, but it is dynamically created and transformed through everyday engagements between multiple human and no human actors. In this sense Adapon (2008b) asserts that by recognizing that cooking is active and creative, its outcome (food, dishes) should be thought of as having social agency. She further adds that an elaborate cuisine such as 'barbacoa' in Milpa Alta is a licence for social action.

Furthermore, food has been also considered as a means to stablish social proximity and connections. For instance, De Garine (2016) has focused on the role of food as a means to make connection between the members of households, in the community or to establish connections with people and their deities through rituals and offerings.

3.3 Food research in Mexico

In Mexico, important research related to the anthropology of food has been conducted on, for instance, food habits by Perez (2006) who was of the view that food habits are culturally constructed practices that are transmitted from one generation to another and conditioned by the economic situation of the family and community. Similarly, Vargas (2006) takes a view that the decision regarding what is consumed depends on the family, environment, social sector but above all cultural elements.

Bertran (2006) conducted a study on food in Mexico City that demonstrated the meanings participants attribute to food and how these are related to economic status; for example, the concept of healthy for participants with high economic status is connected with "natural" food and their physical image, while those with a lower economic status is associated with hygiene and feeling full or satiety. Bertran (2017) also claims that through the analysis of eating habits it is possible to identify the impact of globalisation on daily life. Melendez and Cañez (2010) argue that the study of traditional cuisines can contribute to the knowledge of societies and identify the changes that have occurred in peoples lifestyle.

In addition there are other studies developed from a qualitative framework, for instance case studies focused especially on culinary practices and knowledge related to wild leafy green vegetables in urban areas (Solís-Becerra and Estrada-Lugo, 2014). Other studies focus on the analysis of changes in food practices as a consequence of the transport, subsidies (Castellanos and Alvarez, 2010). Váquez-García, Montes-Estrada and Montes-Estrada (2005) found that maize scarcity has led to a gradual replacement of the traditional drink made with maize, 'pozol' by soft

drinks in a rural community. Jenatton and Morales (2019) argue that 'pozol' consumption remains strong among rural and urban secondary school youth. They further claim that despite the fact that some students perceived 'pozol' as "uncivilized poor person's food" (Jenatton and Morales, 2019, p.28) they consumed it frequently.

Researchers have also focused on the analysis of agroecosystems and local knowledge towards edible plants in a rural community in Chiapas (Escobar, 2017), or the analysis of homegardens, 'milpa', forest and ritual practices in a Maya community (Cahuich-Campos,Huicochea and Mariaca, 2014). Vazquez-Garcia (2008) focused on the gender roles in uncultivated plant management and home gardens and the importance of these plants for the households. She argues that the management of plants in the homegardens by women contributes to the household welfare as sources of food, income and to the conservation of germplasm. Vazquez, Estrada-Lugo and Martinez (2011) argue that analysing food in a Mayan community reveals household group dynamics, relationship networks such as kinship, productive groups and political-ceremonial organizations.

With respect to food, there are only two studies linked to food culture from the anthropology of food framework in the Soconusco region. For example, Velasco (2018) examines the culinary practices and the importance of Chinese food in Huehuetan, Chiapas, Mexico and Lopez (2017) examines local gastronomy in communities on the Tacana volcano, with emphasis on the analysis of ingredients and recipes.

It is evident from the literature review that there are different factors and processes that shape food preparation, consumption, distribution in the households. However, echoing Goody (1982, p.97) is important to examine key structural factors in shaping cooking to understand the different dynamics in the households.

The aim of the research was to examine the effects of socio economic and market forces on small scale farming systems in Mexico. To achieve the aim set out, two keys objectives were formulated, which included examining culinary practices and knowledge in small scale farming systems when involved in alternative food networks and exploring the culinary preferences of consumers and the impacts thereof on shifts in the culinary practices. The core concepts, therefore, such as culinary practices and knowledge are taken from the anthropology of food.

3.4 Main concepts of the framework

In this section, the conceptual framework based on the anthropology of food, culinary practices and culinary knowledge used in the research is explained. The concepts are analysed in the empirical chapters (IV, V) to understand the processes of food production, distribution, preparation and consumption in a rural context in the Soconusco region.

3.4.1 Culinary practices

The concept of culinary practices in this study refers to the tangible materials involved, techniques employed, and actions carried out during the different phases of food production, distribution, preparation, and consumption. The different phases of food are based on Goody (1982); whose work emphasises that the different activities developed by households to obtain or grow food products such as plants or animals should be included in the analysis. Additionally, the different aspects of food production such as the sources of food and the importance for the households should be included in this phase.

The distribution phase depends on the nature of the products; in the framework used by Goody (1982) the analysis includes the modes or types of transactions or sets of relations around products, for instance, allocation within the households, reciprocal exchange and the market.

Goody (1982) argues that the food preparation phase further comprises of three sub-phases (preliminary work, cooking and the dishing up) and various other aspects (who cooks, and or to whom, and the technology of cooking).

The consumption phase according to Goody (1982) consists of the assembling of the participants, the serving of the food, eating and clearing up. He adds that it is important to analyse the structure of the meal, the distribution in time, who eats with whom (the consumption group) and the technology of eating.

It is important to add that traditional food systems tend to have a staple food, for example rice for Asian cuisine, pasta for Italian, and maize for the Mexican society as the basic ingredient to make a myriad of food preparations (Garine, 2016). In addition to the staple food or primary ingredients there are secondary food ingredients that are consumed frequently and depend on the seasons, and peripheral food that could be consumed in the markets, restaurants or by street vendors (Garine, 2016).

Goody (1982, p.43) asserts that “we need to see the processes of preparing materials for human consumption as the end point of that major activity of human kind, that is the production of food, and to do this it must be examined as a set, a whole, a unity, the phases of the production, distribution, preparation and consumption of food”.

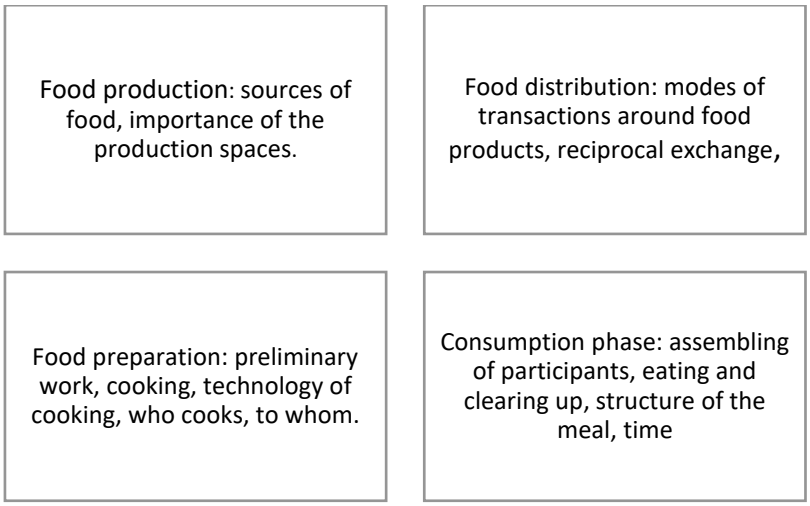

Figure 3-1. Culinary practices phases, modified from Goody 1982.

By understanding therefore, the different phases of food, the research examines the effects of socio economic and market forces on small scale farming systems in Mexico.

3.4.2 Culinary knowledge

The second core concept considered in the framework of the research was culinary knowledge Based on Melendez and Cañez (2010) and Abbots (2017). This concept includes those intangible, subjective, immaterial substrates such as understandings, conceptions, significations, representations, sense of belonging, beliefs, taboos, fears and affections and other knowledge that is acquired through direct experience or by means of the transmission of (transgenerational, family, external, intra-gender, or intra-class) a determined culinary culture. Culinary knowledge is therefore based on practice which can be learnt and developed with practice.

In this study, culinary knowledge such as collecting green vegetables from the forest was considered part of the local knowledge ensemble. Toledo and Barrera-Bassols (2009), define local knowledge as the different forms of appropriating and relating with nature. For Berkes, Colding and Folke (2000) local ecological knowledge institutions (in the sense of rules-in use) provide the means by which societies can act on their local knowledge and use it to produce a livelihood from the environment. In this research, culinary knowledge is considered part of the local knowledge ensemble.

According to Toledo and Alarcon-Chaires local, indigenous knowledge belongs to a broader category termed “sabidurias tradicionales” (traditional wisdom), the intellectual and practical

nucleus through which societies appropriate nature, maintained and reproduced over time. For these authors, local knowledge does not exist separately from the practical activities and belief systems of a cultural group that produces it.

Toledo and Barrera-Bassols (2009) state that the repertory of knowledge is manifested through the dimensions of space and time. An individual's repertory of knowledge is the individualized expression of a cultural baggage constructed from the household, community and ethnic or cultural group. Toledo and Barrera-Bassols (2009) also mention that traditional knowledge is shared and reproduced by means of direct dialogue between the individual, their parents and grandparents towards the past and their children and grandchildren towards the future. Based on these arguments and taking into consideration that culinary knowledge is shared and recreated at the household level, the household was used as the unit of analysis.

In addition, food is considered to have different significances and meanings (Mintz 2003, Bertran, 2006, p.221), understood as the attributes conferred by a population to classify them in order to guide their selection according to the occasion, socio-economic condition, age, gender, physiological state, body image, and prestige among other factors.

The framework used in this study borrows the principle used by Mintz (1996) in terms of two key concepts; 'the inside and outside meaning'. In this research the inside meanings refer to the daily life conditions of consumptions and the outside meanings refer to the economic, political and social conditions.

In order to study food, the research develops the analysis of culinary practices through the phases of production, distribution, preparation, and consumption of food proposed by Goody (1982), see figure 3.2. This approach in combination with participatory research method, photo voice, participant observation, workshops and semi structured, and structured interviews were the key aspects for the analysis of people's in-depth knowledge and processes related to food.

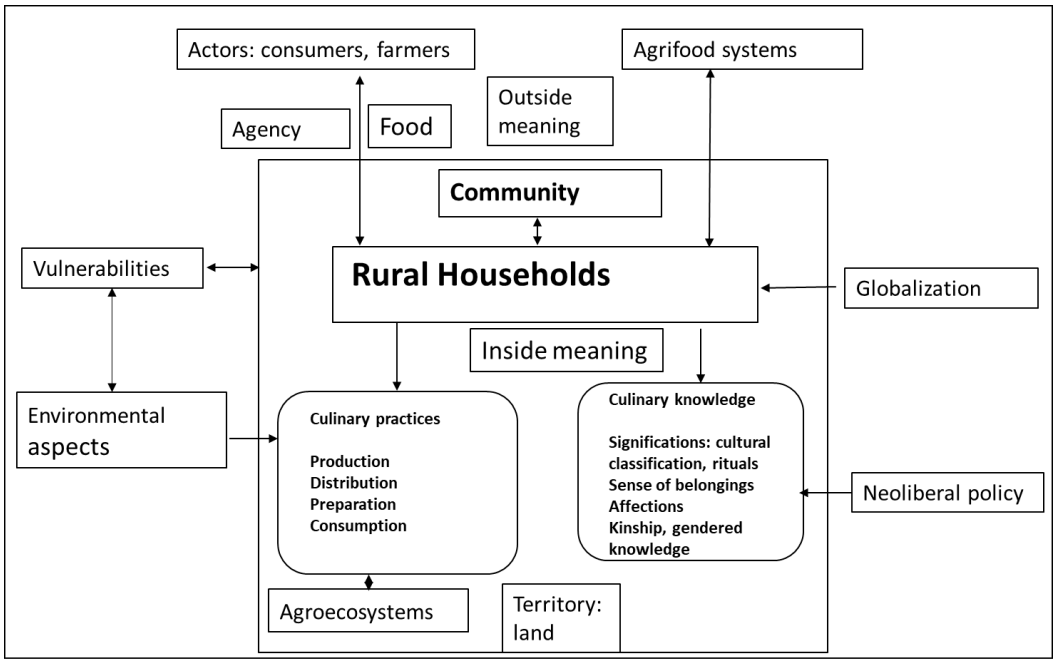

Figure 3-2 Food culture framework modified from Goody (1982) and Mintz (1996)

In figure 3.2 above, as discussed in chapter two the diverse processes such as globalization which promotes tendencies towards the homogenisation of food can have immediate effects on households increasing the vulnerabilities at different levels. Neoliberal policy, industrial agriculture, urbanisation act as factors of transformation in the four phases of food production, preparation, distribution and consumption at the local level presented in the diagram.

Moreover kinship, significations, agroecosystems and territory would influence the culinary practices in the households.

Furthermore, rural farmers are considered in the research as social actors who respond and adjust their culinary practices according to their knowledge, social agency and interactions with other actors.

3.4.3 Rural agroecosystems

When analysing the culinary practices one of the key questions that may arise is, why focus on knowledge and the role of agroecosystems in shaping culinary practices in households of a rural community? The answer is complex; as stated in section 1.2 of the manuscript despite the

importance of the traditional agroecosystems of 'milpa'[4] and homegardens[5] as sources of food for the livelihoods of rural communities; these agroecosystems have been threatened by an expansion of industrial agriculture in Mexico. Agrobiodiversity includes the cultivated plants and animals that form the raw material of agriculture, the uncultivated foods and other products that are collected by rural populations in traditional subsistence systems, including organisms such as pollinators and soil biota that are key to sustainable agroecosystems (Jarvis,Padoch and Cooper, 2007).

Learning from the experiences of rural inhabitants on how they manage their natural resources is essential for the development of effective agrobiodiversity conservation strategies (Pardo-de-Santayana and Macía, 2015). Very little research is devoted in Mexico to the role of agroecosystems in the development of culinary practices and local knowledge of food sources and consumption when households are involved in alternative food networks such as organic farmers markets. A majority of the studies focus on the analysis of culinary practices (Solís-Becerra and Estrada-Lugo, 2014; Escobar, 2017). However, there are several studies that aim to understand the values and knowledge towards food sources such as maize or tortillas in diverse cultural contexts in other regions of Mexico (Cabrera,Martelo and García, 2001; Bridle-Fitzpatrick, 2016; Wynne, 2015; Suárez,Morales and Gálvez, 2013).

Therefore, documenting and understanding the different strategies involved for obtaining, preparing and consuming food as well as the knowledge held in these different phases of food by rural communities involved in alternative food networks, is vital for ensuring that those communities can continue to live and benefit from their agroecosystem.

[4] 'Milpa', an ancient Maya mode of shifting cultivation, comprising a predominantly maize plot where beans (*Phaseolus vulgaris*), squash (*Cucurbita pepo*), and other edible plants and fruits are cultivated and serve as a main subsistence productive system for indigenous groups (Mariaca, 2015; Rodriguez-Moreno, 2013)

[5] The 'homegarden'consisting of fruit trees as well as edible, ornamental and medicinal plants that are grown around the family residence and whose composition depends partly on household structure (Mariaca, 2013)

3.5 Methodology

The aim of the research was to examine the effects of socio economic and market forces on culinary practices and culinary knowledge in small scale farming systems in rural communities in Chiapas Mexico. This study draws on a combination of ethnographic and participatory methods such as participant observation, semi structured interviews, workshops and photovoice as a visual methodology, the details of which are explained in further in the following sections.

During the fieldwork, the key focus was on establishing a collaborative approach with the people in the community and participants in the research. Thus, constructing knowledge rather than taking information away from them. As Pink (2007, p.57) rightly suggests that in a collaborative approach "both researcher and participants invest in and are rewarded by the project".

It is important to underline that the researcher had developed a close relationship and collaboration with several households in the community for more than 10 years through the establishment of the organic farmers market 'Tianguis' in Tapachula. The researcher formed part of the academic committee of the farmers market for the first 4 years and was associated with training activities and also as a consumer.

Data collection was carried out mainly between November 2016 and February 2017 in a small community, Benito Juarez el Plan in the municipality of Cacahoatan in Chiapas, Mexico. During the first two months the researcher attended to meetings and a Christmas party with the farmers. During the fieldwork the researcher was accompanied by her 4 year old son.

3.5.1 Ontology and epistemology

The research was underpinned within qualitative approach developed by means of qualitative methodology. Qualitative research methods involve the systematic collection, organisation and interpretation of textual material derived from talk and observation and it is used in the exploration of meanings of social phenomena as experienced by individual themselves, in their natural context (Malterud, 2001). The main philosophical approach that underpinned the research was constructivism. Rakic (2012) views that constructivism with the relativistic ontology and subjetivistic epistemology might be the most viable philosophical position for studies related to visual studies as is used in this research. The main method used was photovoice accompanied by semi structured interviews, participant observation, workshops and structured interviews.

3.5.2 Households, unit of analysis

The unit of analysis used in this research were households. Drawing on from the research developed in Mexico, Chant (1991:6) defines households as a unit of social organisation "which usually combines shared residence and shared reproduction (defined as income generation, consumption and domestic activities such as cooking and eating)". Having defined households based on the single residential unit it is important to note that social, economic and kinship relations are developed in this social space (Escalona, 2001). According to Chant (1991) households embody values of the wider kinship system, "such as patriarchy and division of labour along the lines of gender". In addition, Chant (1991, p.7) argues that in Latin America men are invariably allocated the primary responsibility for productive work (income earning), whereas women's tasks are reproductive (unwaged activities which contribute to the maintenance and survival to the household's members such as childcare and housework). Thus, is important to emphasise that there are power relations in the households.

The definition of households resonates with Cervantes (2018) who describes household in an indigenous context in Chiapas as the social unit that lives in a house of a localized kinship group and the household could be constituted by a nuclear family (parents and children) or extended family and could include members with no kinship relations.

The following characteristics of the households were considered in order to understand the dynamics of the households during the research. Based on the Mesoamerican households model proposed by Robichaux (2007) (see table 3-1 below) these stages are shaped by three cultural principles: patrilocal residence, equal inheritance of the land with patrilineal privilege, and the inheritance of the house for the last son of the family.

Table 3-1 Households development cycle based on Robichaux (2007)

Households development cycle	Characteristics
Expansion	When a nuclear household becomes an extended household, usually when a son gets married and brings his wife to live with him in his parent's home
Dispersion	When the son disperses with his nuclear family to his own house, which can be within the same homegarden. A daughter leaves home to marry and live in her parents-in-law house.
Substitution	When the parents are older and usually the youngest son and his family live in the same house to look after them.

To fulfil the aim and objectives of the research it was decided to employ a purposive sampling strategy following Flick (2014). Hence, the main consideration for the selection of the study site was to select households with organic-agroecological food production practices with close relationship with consumers.

3.5.3 The study site and participants

Chiapas is located in southeast Mexico and has a population of 5,217 908 inhabitants distributed among 119 municipalities and over an area of 73 311 km2 (INEGI, 2015) 76.2 % or 3,961,000 inhabitants live in poverty, including 31.8% in extreme poverty (Coneval, 2015). 51% of the population live in rural areas. In Mexico, those communities with less than 2500 inhabitants are considered as rural areas (INEGI, 2015). In Chiapas, the main agricultural crops for the market or agribusiness include, banana, coffee, oil palm, papaya and mango (SAGARPA, 2016). The research was carried out in the Soconusco region in the state of Chiapas Mexico. Soconusco is considered a bio cultural region in the south of Chiapas covering the slope of the 'Sierra madre de Chiapas' and its coastal plain (Romero-Berny et al., 2016). The details of the study site are presented in the following sections below.

3.5.3.1 Study Site: Benito Juarez el Plan in the Tacana Biosphere Reserve

Fieldwork in Benito Juarez el Plan focussed on rural households participating in an organic farmers' market with the view to understand the culinary practices and to what extent they depend on the agroecosystem, and in doing so, identify their knowledge towards food sources and consumption practices. This in turn would provide key information on how market forces can influence small scale agroecosystems.

The community is within the buffer zone of the Tacana Volcano Biosphere Reserve at an altitude of 1420 msl (see figure 3.3 below). The community is located 400 km southeast of the capital, Tuxtla Gutierrez, and has a population of 241, residing in approximately 50 households. The Tacana volcano Biosphere Reserve forms part of the Central American volcanic chain and its summit straddles the Mexican-Guatemala border; it includes several forest and alpine ecosystems, providing habitat to many endemic species (SEMARNAT, 2013). In 2010, Benito Juarez el Plan had a population of 271 inhabitants, with a high marginalization index. Thus, they depend on different activities that support their livelihoods.

The Tacana Volcano translates to "our mother" in 'Mam' language (the Mayan language spoken in Guatemala and the state of Chiapas in Mexico), and has been inhabitated by 'Mame' communities in the region in Guatemala and Mexico (Toledo and Coraza, 2018).

The Mam indigenous group inhabits the southeast region of Chiapas, Mexico and western areas of Guatemala. It is considered as the only indigenous group in the region, populating mountainous areas around the Tacana volcano and communities close to the border with Guatemala. The binational Mam population has been subject to different processes. In 1882 the state of Chiapas, previously part of Guatemala, was incorporated into the nation of Mexico and during the agrarian period (1936-1940) the process of Mexicanization was imposed to the indigenous population. The national policy of Mexicanization involved the 'integration of indigenous people to the Mexican nation' or the "Mexicanization of the Indian" and consisted of programmes of integration (París P., 2007). In Chiapas diverse measures were implemented for the improvement of the indigenous race (París P., 2007) and led to an aggressive process of acculturation against the Mam culture that included the prohibition of their language and traditional clothing which were considered as Guatemalan characteristics (Toledo and Coraza, 2018).

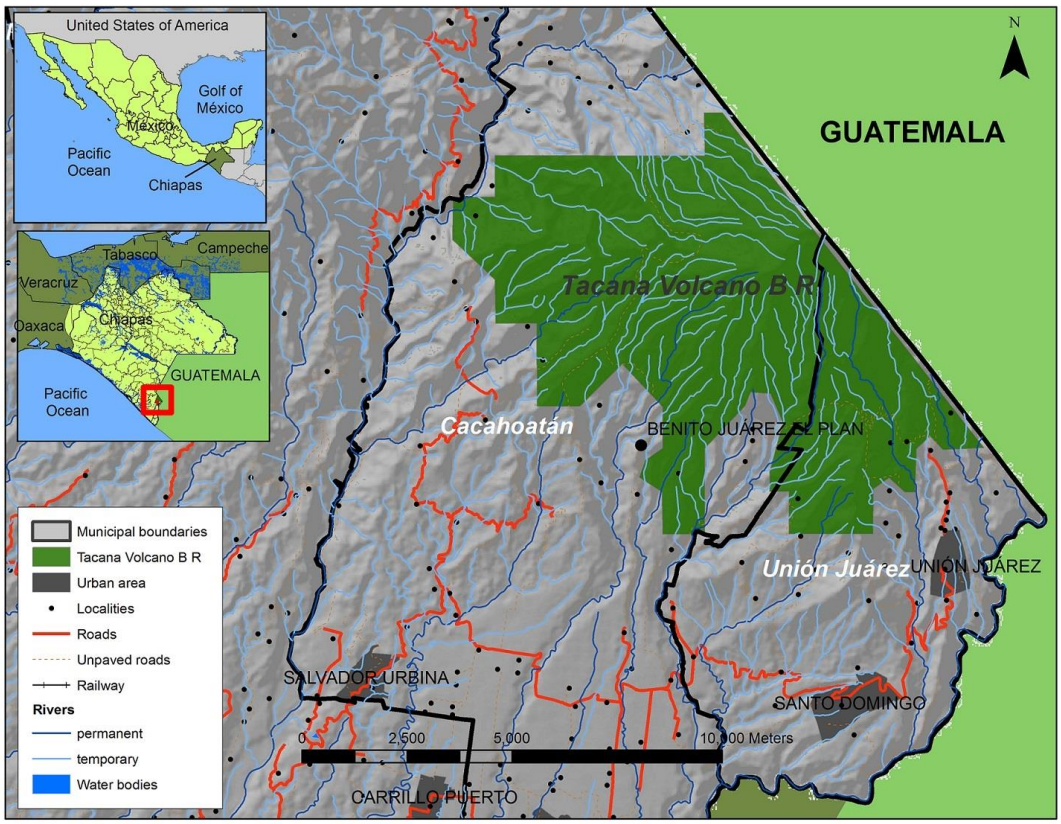

Figure 3-3. Map of Benito Juarez el Plan, near the Biosphere Reserve.

Community services are basic; the supply of water is guaranteed by using plastic pipes that transport water from the mountain streams to the village below. The houses in the community generally are built with corrugated sheet roofs, concrete floors and walls, while the kitchens, usually an extension of the main structure, generally have wooden walls and corrugated sheet roofs. The houses have electricity, toilets and cesspits for the management of sewage.

As there are no medical facilities in the community, medical attention requires an arduous journey of over 10 miles to the town of Cacahoatan. A narrow steep paved road, followed by a muddy track, connects Benito Juarez to Cacahoatan. There are no landline telephone facilities; however mobile phones are generally used in areas depending on mobile phone signal strength.

3.5.3.2 Participants

Initially eleven households (out of fifty) within the community were invited to participate in the different activities of the research. The rationale behind targeting these households were based on

the following criteria: i) willingness of the households to participate in the research and ii) representation of households from those who were actively engaged in the organic market activities and those that were not involved. However, only eight households represented by female members of the households agreed to participate in the different activities within this research project, which involved workshops, photo voice and semi structured interviews. All of the eight households were members of the 'El Huacalero' organic farmers market or 'Tianguis' located in Tapachula. These participants, mainly women are generally responsible for the food preparation in their households in addition to the responsibilities attached to the organic farmers' market, which involves selling fruit and vegetables, ornamental plants and cooked food as chicken stew, quesadillas[6], tortillas thrice a week at the organic farmers' market.

The organic farmers market 'El Huacalero' was established in Tapachula in 2007, as a project involving different actors including several local communities, cooperative groups such as CASFA; the International Union for Conservation of Nature (IUCN), and academics from three academic institutions El Colegio de la Frontera Sur (Ecosur), Centro Bachillerato Teconologico (CBTA), and University of Chiapas (UNACH). The principal aim of the 'Tianguis' was to develop a new approach for selling agrochemical-free produce at fair prices from the homegardens, coffee groves and 'milpa', while creating opportunities for training and personal empowerment for the network of smallholders and consumers (Hernandez et al., 2012).

The farmers market belongs to The Mexican Network of Local Organic Markets and as a network promotes an alternative certification process the Participatory Guarantee System in order to verify and legitimize that produce are natural, organic or without agrochemicals. At the local level the certification process, following the general guidance of the network, is managed by a local committee integrated by farmers, consumers, academics and others stakeholders who volunteer their time to carry out the certification (Nelson et al., 2016).

[6] 'Quesadillas' is the Mexican staple food tortillas made with maize dough and stuffed with cheese or any cooked vegetables.

3.5.4 Photovoice, its advantages and limitations

As highlighted in section 3.5.1 above, that constructivism with the relativistic ontology and subjectivistic epistemology prove to be the most viable philosophical position for studies related to visual studies such as photovoice, a visual method underpinned by a constructivist approach that was used in this research.

Photovoice a term introduced by Wang and Burris (1997, p.381) referring primarily to "voicing" our individual and collective experience. The method involved the provision of digital cameras to the household (mainly women as they are the participants in the farmers market) participants as a way to document and discuss in depth their culinary practices. This method was chosen considering that, participants would have the opportunity to portray their experiences and share personal knowledge about their food and culinary practices, thus providing a deep insight into food culture in rural communities where the majority of inhabitants, especially women, are not used to expressing their ideas and beliefs.

Further, as observed by Castleden, Garvin and First (2008) the intention behind using this method was that it could help to balance the power between researcher and the participants. Photovoice is also a method that facilitates the collaborative approach between participants. Thus, photovoice was chosen in this research as a way to share power with participants. Langman and Pick (2013), assert that in photovoice participants control the data collection process as they determine the photo and the voice, they have control of the camera, and choose subjects that are relevant to them and helps to capture the idea of dignity in research. For Wang and Burris (1997) every human being is capable (if given the right tools) to perceive his or her surroundings, thus power increases to those with voice, and it empowers research participants during the research process and through this its impacts on policy.

Additionally, other benefits are associated with the use of the photovoice method. Firstly, photographs can represent a heritage record for the participants (Adams et al., 2012). Secondly, photovoice being originally proposed in a Freirian context of problem-posing education (Wang and Burris, 1997). It was expected that "the images produced during the project and the issues discussed and framed by people may stimulate community problem solving, organizing and social action" (Wang and Burris, 1997, p.385). Thirdly, photovoice has been used largely as a method for community-based participatory research to explore community health issues (Kramer et al.,

2010; Lardeau,Healey and Ford, 2011; Wang et al., 1998; Wang and Burris, 1997; Freedman et al., 2014).

Photovoice has been used successfully in different countries around the world to explore and investigate an array of varied topics such as mental illness, health, home and homelessness, food security, food insecurity, social participation, education, mothers stories on poverty, life in community, mothers with learning difficulties, healthy eating in rural women (Fleming et al., 2009; Kramer et al., 2010; Mabry et al., 2016; Mikhailovich,Pamphilon and Chambers, 2015; Nykiforuk,Vallianatos and Nieuwendyk, 2011; Quigley et al., 2014; Teti et al., 2013; Wang et al., 2004; Booth and Booth, 2003; Castleden,Garvin and First Nation, 2008; Wang and Burris, 1997; Duffy, 2011).

In the case of Latin America, the use of photovoice as reported in literature is limited. However, there are a few studies that focus on migration, youth and creative photography (Winton, 2016), and in areas of conservation and natural resource management issues (Miller et al., 2016; Quigley et al., 2014). Photovoice has also been used to study ecosystem services and wellbeing (Berbés-Blázquez, 2012) and environmental perceptions and the valuation of mangroves in the state of Veracruz, Mexico (Baez Ponce and Estrada Lugo, 2014).

Considering the benefits of the method mentioned by other scholars, photovoice was chosen as it encourages collaborative research, invoking deep reflection and discussion about participant's experiences in culinary practices. It was also chosen because the photographs will be used as a tool to elicit a more natural conversation during the semi-structured interviews.

Although photovoice has been proven to be an important research asset to develop participatory research, it is important to note that this method has some limitations, one of the most important is that it requires participants appropriation and strong engagement with the research project in order to invest time in taking the photographs and share their narratives about the topic. It also requires the ability of the researcher to encourage participants to develop an in-depth narrative and transcend the message of the image. Thus, it is important to develop clear questions or prompts to encourage participants when talking about and discussing the photos.

Another challenge encountered during the present research was the ability of women to take photos with the digital cameras. Some of them did not visit the coffee groves as it involved a 2

hour walk over difficult steep terrain, so in these cases they decided to give the cameras to another member of the household such as their sons or husband.

3.5.5 Research process

The following activities were conducted during the fieldwork with participants in the study site: Two workshops (one at the start, and one at the end of the research), semi structured interviews based on the photos taken by the participants and observation in the households. These research activities were carried out in three stages with the same participants in the community. Details on what these stages entail are explained below; see the Figure 3.4 below.

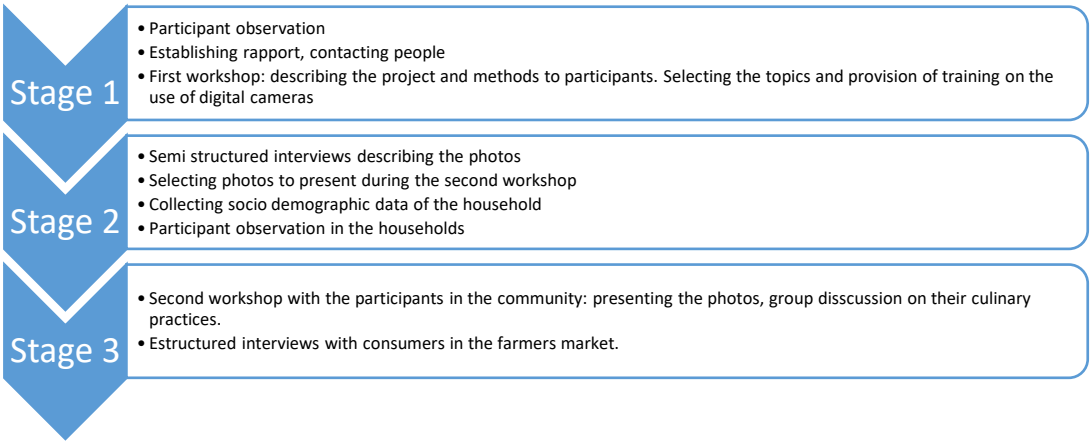

Figure 3-4 Sequence of the research activities in the study site

3.5.5.1 Stage 1

The first stage involved participant observation in the community and consisted of helping the households to water their plants, observing the plants in the homegardens and inquiring about the use of them, helping in the kitchen to cook, having a meal in the households, and exploring the surrounding forest and milpa accompanied by women and their young children. Young children were usually present as they accompanied the researcher's 4 year old child. The aim of these activities was to develop rapport with participants and to obtain depth knowledge of the context of the community and households (see observation guide in Appendix III.A). Flick (2014) claims that during the participant observation process the researcher increasingly become a participant and gains access to the field and to people.

During this stage participants were invited to attend the first workshop (see Appendix III.B). The invitation to participate in the research was put forth to the households and they decided that

women would participate in the workshops as they were in charge of food in the households and in the 'Tianguis'. The prime motive behind the workshop was to brief the participants on the objectives, the methodological aspects and the various activities that involved the farmer's participation in the research. The participants in the workshop were mainly women and they were especially briefed on the principles and procedures involved in the use of photovoice. The core concepts of the framework to be captured in the photographs that integrate culinary practices were explained to the participants and they were instructed to take photographs that captured the essence of the following four categories that reflected their culinary practices: (i) food products that participants consume (production), (ii) where does food come from (provision), (iii) preparation practices (preparation) and (iv) who do people eat with (consumption). The categories were proposed by the researcher in order to facilitate participants to focus on areas of interest and stimulate conversation. This decision was taken a priory by the researcher following the concepts proposed in the framework. According to the constructivism approach it would have been better to construct with participants the research topics but because of the time restrictions and the distance of the fieldwork site, this was not possible.

It is important to emphasise that the participants were willing to participate in the photo voice activity as they mentioned that the consumers in the 'Tianguis' were not aware of the different activities and hard work involved to produce food in the community. Thus, the main aim for the participants was to take photos and share them with the consumers. At the onset of the research, it was also planned to provide the photos to the participants so they could display them at a photo exhibition in the farmers market.

During the workshop the participants were provided with digital cameras, Nikon Coolpix, and were encouraged to practice taking photos to get used to the camera and the process of taking photographs. At the beginning of the training the participants cited their discomfort in using the cameras, since they had never operated a camera before.

The participants were instructed to take four photos under each category mentioned above over a period of two weeks resulting in a total of twenty photographs approximately by each participant. The number of photographs proposed was to facilitate the analysis and to avoid saturation of the topics.

3.5.5.2 Stage 2

The second stage involved semi structured interviews with the participants after two weeks since the commencement of stage one. Following Flick (2014), semi structured interviews were based on a set of prepared open-ended questions that were used as a guide for the interviewer. Prior to the semi-structured interviews, the photographs, the cameras were collected from the participants and the photographs were printed. The semi structured interviews with each participant was carried out (in Spanish) to allow the participants to explain in detail why and where the photos were taken. The interviews were carried out in the participants' kitchens. Three participants mentioned that taking photographs was not an easy task and in three cases, they had to ask their children to take the photos.

The semi structured interview guide was divided in four topics that helped in the discussion around the photographs (see Appendix III.C). The topics for the semi structured interviews revolved around the following key topic areas: (i) food production practices, (ii) food consumption and preparation practices, (iii) food changes during the last generation, (iv) food preparation for the farmer's market. The photos were laid out on the table by the researcher and the participant. Once they had laid out the photographs, the researcher asked the participant to describe the reasoning behind clicking the photographs and asked questions to help the participant to contextualize the photo and share their voice and experience.

The photos acted as an elicitation instrument that encouraged the participants to talk in depth about food and culinary practices in the households. Thus, it was easier for the interviewer to carry out the interview based on the photos and the interview guide, and participants were happy to talk about the different topics. It was evident that the rapport developed between interviewees and researcher helped during the interview process to develop a more informal conversation.

Finally, during the interviews, participants selected four photos that represented their culinary practices and they provided captions and titles for these photographs. Providing titles and captions to the photos was not an easy task for the participants, thus the researcher helped with examples. Additionally, household sociodemographic data was collected at the end of the interview.

3.5.5.3 Stage 3

The third stage involved bringing together all the participants at the second and final workshop where the participants were asked to present in broader groups and categorise the four photographs they had chosen during stage 2 (see Appendix III.D). The rationale for this was to help the participants to develop their own classification of photographs and reflect on their food,

practices and beliefs. The workshop was carried out in the house of one of the participants, and some of them brought their younger children to play with the researcher's child.

The photos were organized into categories by the participants: food from the parcela-milpa (food products that are grown or cultivated in the plots and milpa), food products grown in the homegarden and, comida-food (daily dishes prepared and consumed). Once the photos were organized by the participants, discussions ensued, the main food and drink consumed within the community were discussed in detail. Further topics that were discussed included changes in food production and values, food classification, and productive activities carried out in the community during the year. These topics are considered part of the culinary practices and the aim of the activity was to reflect in-group about the topics that were previously discussed during the interviews. At the end of the workshop one of the participants cooked two dishes that were mentioned during the plenary and another participant brought 'quesadillas' to share with all participants.

3.5.5.4 Consumers interviews

In order to explore the culinary preferences of consumers and the impacts thereof on shifts in culinary practices in the Soconusco region, fifty structured interviews were conducted in Tapachula, in the Farmers market during February 2017 (see Appendix III.E). The interviews were focused on the following topics: (i) consumers' sociodemographic, (ii) motivations to visit the Tianguis. (iii) food preferences when visiting the Tianguis. The questions put to the consumers primarily covered, what food they consumed, what food they liked most, and food they disliked. (iv) new food consumed in the Tianguis. For this topic, consumers were asked what food preparations or produce they had consumed for the first time in the Tianguis.

3.5.6 Data analysis and ethical considerations

The semi structured interviews and workshops with farmers were carried out in Spanish and digitally recorded. Semi structured interview transcripts, field notes, photos, workshops transcripts were uploaded and coded in N Vivo 11. The transcripts were read several times to identify themes within the dataset. To develop codes and themes from data, inductive thematic analysis (process of following codes and themes from the data) was carried out and some themes followed the main concepts proposed in the framework. The main categories of analysis for study site (Benito Juarez) are shown in Appendix III.F.

The analysis of the data of the consumers structured interview was coded mainly in excel 2016. For the food preferences of the consumers, new products consumed the data was read several times to identify the main themes for the analysis.

Farmers were asked their informed consent before starting the project and during the workshops and interviews. Specifically, participants signed the consent form to use the photographs with their names for academic purposes and for the photo exhibition. The photo exhibition was suggested by the researcher during the first workshop as a way to communicate the results of the research project to a wider public. The ethics committee of the Department of Environment and Geography approved the study and the research instruments.

Langman and Pick (2013) argue that the protection of anonymity is another ethical consideration linked to dignity in research when using photographs. They mention that blurring the image of their face could result in the loss of an important dimension of the person and seen as an objectification of his or her identity. Thus, drawing from this, the names of the participants in this research are included in the photo captions as a way to acknowledge the right and dignity of the participants. All the participants agreed to this before signing the consent form.

Chapter IV. Understanding the importance of culinary practices and knowledge.

4.1 Introduction

Based on qualitative research conducted through the use of photovoice accompanied by semi-structured interviews, workshop discussions and participant observation in a rural community in the Tacana Volcano Biosphere Reserve, this chapter presents an analysis of the culinary practices (production, distribution, preparation, consumption) and culinary knowledge of households. As discussed in the research problem section (1.2) the local productive systems that are the source of food in rural areas are more vulnerable and exposed to external forces. Hence, in this chapter, social processes such as the alternative food network's influence on culinary practices in the community is explored.

4.1.1 Structure of the chapter

The chapter is organised into nine sections, section one presents a short introduction, section two analyses the composition of participating households. This is followed by an examination of productive activities and their importance to household members. Examining the characteristics of the households is an important step for the present research aim as households depend on the workforce available to develop their productive and reproductive activities and hence their culinary practices. The culinary practices are analysed including food production practices, food preparation practices and food consumption practices are explored in detail. Knowledge associated with food is presented in the latter part of the chapter followed by discussion.

4.2 Household composition

Results presented in the chapter draw from the analysis of culinary practices of eight households who were actively involved in the organic farmers' market activities in Benito Juarez el Plan in Cacahoatan, Soconusco region. As described in chapter III (methodology) the main research tool used to collect data for this research was photovoice accompanied by participant observation, semi structured interviews and two workshops.

In order to understand the culinary knowledge and culinary practices of the households in a rural community it was necessary to acquire a more profound knowledge on household composition. The mean number of persons in the households was 7.8; the largest family constituted of 13 people and the smallest household consisted of five members (see table 4.1). All children between 3 and

15 years old attended school either in the same or neighbouring communities. Although most adults in the households had completed at least six years of education, 10.5 % of the total of the population had not concluded basic education (six years).

Of the eight households included in this study, seven had at least one member who spoke 'mam', the ethnic indigenous language (all families considered themselves descendants of the 'mam' ethnic group) while all participants spoke Spanish. Six members of the different households had previously migrated to US and have since returned to the community.

Table 4-1. Socio-demographic details of the households based on fieldwork

Household number	Number of people per household	Number of people who speak Mam	Number of people who have previously migrated to the US	Number of children per household	Daughters and sons in law living in the same household	Grandsons or grand daughters	Household type
1	9	7	2	7	0		Nuclear
2	5	3	1	3	0		Nuclear
3	5	2	0	1	1	1	Expansion
4	5	1	2	3	0		Nuclear
5	13	1	1	5	2	4	Expansion
6	9	2	0	4	2	1	Substitution
7	7	2	0	5	0		Nuclear
8	10	0	0	8	0		Nuclear

Regarding the classification of households (see table 4.1 above), there were five nuclear households[7] consisting of a couple and their offspring. There were two households in the

[7] According to Robichaux (2007) nuclear households are usually integrated by the mother, father and their children. See Robichaux (2007) for a more detailed analysis of the household concept.

expansion stage, which consisted of the couple, their children and grandchildren. A single household was in the substitution stage consisting of an elderly couple their daughter, son-in-law, son, daughter-in-law and grandchildren.

4.3 Households' productive activities

The primary activity for men in the research was agriculture in the 'milpa' and coffee groves, while three of the farmers were also actively involved in the farmers' market, serving and preparing food and in transporting produce to the market. Women on the other hand managed the homegardens such as sowing seeds, watering the plants, and working in the 'milpa' in addition to active participation preparing food or selling vegetables in the organic farmers' market in Tapachula.

Households tend to be involved in various productive activities depending on the availability of workforce within a household and the possession of land, hence the importance of focusing on the household as a unit of analysis. For instance, the children would accompany the farmer to the 'milpa' plots and coffee groves to help with various agricultural activities. None of the male members of the households worked outside the community, for example as casual workers on other farms. The female members required support from other female members of the household, for example, daughters, grandmothers, or daughters-in-law to ensure they had sufficient time to participate in both the farmers' market and routine household activities such as cooking, washing clothes and cleaning the house. In some nuclear households they would receive support from other households to develop daily activities. On average, women sold their products[8] at the organic farmers' market twice a week. Participants from the nuclear households with young children, (see number 1 and 7 in table 4.1) stated that it was more difficult to get involved in the farmers' market more than once a week. In three households, children above the age of fifteen years old would primarily travel to the farmers' market held on the weekend to sell produce or serve food to the consumers.

[8] The main produce that women usually sell in the farmers' market includes hand-made tortillas, maize dough, fresh leafy green vegetables, vegetables, and prepared hot food such as tamales, free range chicken stew, quesadillas, and some fruits such as bananas, limes and plantains.

Children generally attend school (primary or secondary school) and help their parents during their free time in activities such as watering the plants, cleaning the house or some tasks in the 'milpa'. It was evident from the discussions with the participants during the second workshop that the period between December to April was among the busiest of the year, when members of the households are either occupied harvesting the coffee beans and maize or collecting firewood for cooking.

Most of women do not own land in the 'ejido', only one participant mentioned that she bought a piece of land when she was working in the USA. Women generally participate in agricultural activities such as harvesting coffee, beans and maize. However, during peak periods when there is increased demand for labour; farmers seek help from neighbours and reciprocate when their neighbours require help. These shared activities strengthen reciprocity ties that support farming livelihoods. The following quote from the participant captures this essence:

> "When it is time for planting the maize, for example, you can help me in the planting so we can finish ours today and tomorrow we will help you, so you can finish in just one day. But this work is unpaid, we support each other like this. Occasionally, we slaughter a chicken to provide the helpers with their breakfast" INT-003-BJ

Contrary to this practice, during the coffee harvesting period most of the farmers tend to pay daily wages to those who offer the service including those within the same community and neighbouring communities to help with the harvesting of coffee bean, when the coffee groves require more intensive labour.

It is evident from the above observations that households tend to be involved in various productive activities, depending on the availability of workforce within the households throughout the year. It was also clear that it could be more difficult for women with young children to get involved in the farmers market as well as carry out the daily household activities. The importance of the solidarity ties within households and community to develop the livelihoods is evident in the community.

4.4 Food production: Capturing importance of food sources through pictures

One of the key concepts focused in the research was culinary practices, and as explained in the methodology chapter section 3.4.1 the sources of food is an element of analysis of the broader framework. Thus, in order to understand culinary knowledge that people in this community attribute to food, the sources of food that sustain the inhabitant's livelihood were first analysed

based on specific themes developed by the participants during the photo voice process. As discussed in chapter 3, section 3.5.5.1 participants were asked to capture the sources of food from the 'milpa', homegardens, coffee groves and the key foods they consumed in the form of photographs. In addition, the rationale behind the choice of the photographs captured by the participants were discussed during the workshop and interview sessions with them.

Table 4.2 below shows the main sources of food and the number of photos taken by the participants.

Table 4-2. Sources of food. Photographs taken by participants

Households	'milpa' (Nos)	Homegarden (Nos)	Coffee groves (Nos)	Total of photos
Elvira	10	5	-	15
Eulalia	14	2	-	16
Herlinda	12	1	-	13
Griselda	4	2	4	10
Martina	8	1	-	9
Refugia	2	5	1	8
Sofia	3	2	1	6
Tenchi	6	5	3	14
Total	59	23	9	91

It is evident from the above table that the participants were very engaged in the process and collectively had taken 91 photos. Most of the photographs were taken in the 'milpa' and in the homegardens. The following section outlines the rationale behind the participants' choice of photos they decided to take during the process.

4.4.1 Relevance of ‘milpa’ as a key source of food for the participants

The proximity of the community to the Tacana Volcano Biosphere Reserve at an altitude of 1420 msl, together with the prevailing weather conditions allowed farmers to grow ‘milpa’ at high altitudes and coffee at lower altitudes of the ‘ejido’. The higher cultivated areas, close to the biosphere reserve, are usually referred to as the ‘parte alta’; here native maize (*Zea mays*), beans (*Phaseolus*), and squash (*Cucurbita ficifolia* and *Cucurbita moschata*), tree tomatoes (*Cyphomandra* betacea), ‘chayotes’ (*Sechium edule*), are cultivated and edible plants or green leafy vegetables such as ‘hierbamora’ (*Solanum americanum mill)*, different varieties of chili, and other wild leafy green such as ‘pata de paloma’,‘correlon’ (*Solanum appendiculatum Dunal)* ‘quilete dulce’,‘cesil’ ‘candelaria’, ‘bledo’ (*Amaranthus spp*) are grown spontaneously in the plots, without the use of agrochemical inputs. The leafy green vegetables are generally called in Mexico as ‘quelites’, but in the region are designated with the term ‘verduras’.

Fruit and vegetables were also cultivated adjacent to the ‘milpa’ including avocado (*Persea Americana*), tree tomato (*Cyphomandra betacea*), ‘quishtan’ (*Solanum wenlandii Hook F)* bananas (*Musa paradisiaca*), ‘pacaya’ palm (*Chamaedorea tepejilote)*; and vegetables such as potatoes (*Solanum tuberosum*), radishes (*Raphanus sativus*), sweet potatoes (*Ipomea batatas*), and a variety of beans (*Phaseolus*). The ‘milpa’ is located at a higher altitude than the settlement, with an approximate distance of three miles between the household residences and the ‘milpa’.

The households cultivate maize three times a year, which is predominantly used to prepare tortillas. Generally, a significant proportion of the maize is consumed within the households and the remainder is used for making ‘tortillas’ or ‘tamales’ and sold at the farmers’ market in Tapachula. Maize from the ‘milpa’ was also used as animal feed.

The participants were asked during the interviews about the importance of the ‘milpa’ in relation to the home gardens. The purpose of exploring the importance of the different agroecosystem the communities depend on, was to acquire a more in-depth knowledge associated with the sources of food. Responses from two participants demonstrated that they place equal importance on both spaces as they provide essential food for the households. However, six households placed more importance on the ‘milpa’. According to these respondents, ‘milpa’ can provide higher quantities of staple food as it covers a larger area than home gardens. This is further resonated in the number of photos taken for ‘milpa’, homegarden and coffee groves (see table 4.2 above) by the

participants. The following quote from a participant clearly describes the importance of these places of cultivation for the household.

> "The most important thing for me is our plot of land ('milpa'), because here our homegarden is small so we can't grow many products and on our plot of land we can plant many products such as corn, coffee, beans, trees or shrubs for firewood for cooking chayote, vegetables. Well, we can produce almost everything there. Here, the homegarden is very small and some of it is on a steep slope". INT-005-2017.

During adverse weather conditions such as strong winds, heavy rain and hurricanes that affect the region, particularly during the rainy season, households may have sufficient food produce to survive such as leafy green vegetables and maize from the 'milpa'. For instance, participants mentioned in the workshop that during hurricane Stan in 2005, most rural areas in the region were affected by severe flooding and landslides and experienced food shortages. Thus, staple food obtained from the 'milpa' acts as a "buffer" against severe weather events.

The relevance of the 'milpa' as an agroecosystem that provides staple food for households around the year is clearly supported by the photos taken by the participants and is further reinforced in the interviews (see all the photos chosen by the participants in Appendix IV.A).

4.4.2 Coffee groves as a source of food and income

Four out of the eight families took only nine photos of the coffee groves (see table 4.2, above). It was evident from the interviews that households who participated in the research owned small coffee groves not exceeding two hectares in size. Women stated that it was difficult for them to take photos from the coffee groves because some of the plots are far from the village and mostly men go to work there.

Within this diverse agroecosystem a range of fruit and vegetables were cultivated associated with the coffee plants; these include mandarins, varieties of bananas, plantains, oranges, pacaya' palm (*Chamaedorea tepejilote*), 'tepejilote' palm *(Astrocaryum mexicanum),* 'chalum' *(Inga spp),* 'guinte'*(Yucca spp),* 'guisnay' *(Spathiphyllum phryniifollium Schott)*. There are also uncultivated leafy green vegetables such as 'pata de paloma' (*Rivina humilis*), 'yerbamora' (*Solanum americanum mill*), 'capote' (*Xanthosoma robustum Schott*), and 'quilete dulce', among other edible plants.

The coffee beans were mainly sold in the farmers market or to the coffee trader in the nearest town. Families usually retained some coffee beans for household consumption. The photos

portrayed by the participants were mainly to state the importance of the agroecosystem for growing a diversity of trees and leafy green vegetables. See below the photo taken by one the participants.

Figure 4-1 My family's coffee grove. Arabic coffee in the Ejido Benito Juarez el Plan. Photo taken by Salustio.

Although it was difficult for some participants to take pictures of the coffee, this does not imply that these agroecosystems do not make an important contribution as a food source. Participants identified themselves more with the 'milpa', which allows women to grow more varieties of food; however, the coffee groves also provide a great diversity of edible plants and fruits.

4.4.3 Homegardens as sources of food

Exploring the culinary practices formed the basis of this research, as explained in the introduction section of the manuscript. The sources of food formed an element of analysis of the broader framework. Hence, the participants were asked to describe the food that was obtained from the home gardens[9] and the importance they attributed to this food. Home gardens are those spaces around the house where edible green leafy plants and fruits are grown. Some of the households cultivated herbs such as camomile (*Martricaria chamomilla*),'ruda'(*Ruta graveolens*), peppermint (*Mentha pipperita*), basil (*Ocimum basilicum*), oregano (*Origanum Vulgare*), thyme

[9] Home gardens are no more than 50 mts long by 20 mts. wide.

(*Thymus vulgaris*), 'vic plant' (*plectranthus tomentosa)* and 'epazote'(*Dysphania ambrosioidies).* Flowers and ornamental plants were also cultivated in the home gardens which are generally sold at the organic farmers market or in the nearest village. Participants have been cultivating ornamental plants in the home gardens for 10 years. A social organization was established, and with financial support from the IUCN and CONANP, small rustic greenhouses were built with the aim of providing an additional income for the households.

Additionally, households generally tend poultry or livestock in the home gardens which included free range chickens, turkeys, ducks, and to a lesser degree, pigs, all as a primary source of food or sold when the household faces shortage of funds. See the photo taken by one of the participants below.

Figure 4-2. Free-range chickens. Photo taken by Melisa, Elvira's daughter. The hens are for the stew and we sell it for breakfast in the Tianguis or consume it with the family.

When there is shortage in the supply of food products to be sold in the farmers market, farmers generally buy these products from either relatives or neighbours. The following quote highlights the situation mentioned by a participant.

> "To sell at the farmer's market, I obtain the products from my daughter's family who live over there in Platanar (another small community). She has enough chickens, with a large chicken pen/run with a coop, and everything is fenced in. That's where they lay their eggs and feed". Int-004-BJ

It is evident from the example above that some of the households that sell food in the farmer's market are dependent on solidarity and social networks to cover the consumer's demands. The participant's quote also shows the importance of trust in the relations with closest relatives. As mentioned in section 2.5 in chapter II, the participants in the farmers market tend to follow the principles of participatory guarantee systems to certify the small scale agro-ecological or organic production. One of the guidelines of the participatory certification process states that the household participants in the farmers market should only sell produce that has been certified by the committee during the verification visit. Nevertheless, some participants occasionally have to buy chickens from other farmers (closest relatives) because they do not have enough poultry to cover the food demand from the consumers.

Furthermore, it was evident from the interviews that homegardens play a more significant role in food provision in nuclear households with young children. Cultivating and harvesting a wide variety of food plants near the residence is easier and less time consuming for these families than in the 'milpa', which often entail a laborious trek up and down the steep volcanic slopes. However, there are households where the homegardens cover a relatively small area and this represents a disadvantage for the households because they cannot produce enough food.

4.4.4 Additional food sources for the households

At the onset of the research, the three primary sources ('milpa', coffee groves and home gardens) were identified as key providers of food for the households. However, during the interviews and the workshops it was evident that the community gathered food from beyond these three sources which included forests and food from outside the community such as nearby villages or even urban areas. Therefore, in this section those additional sources of food are analysed.

4.4.4.1 Forest as a source of food

An additional source of food mentioned during the second workshop for households was the forest or 'monte' although none of the households took any pictures of this area or of the products collected. The forest is located at higher altitudes in the Tacana Volcano Biosphere Reserve and is classed as tropical montane cloud forest. Men and women generally gather mushrooms, leafy green vegetables from these natural areas. It was evident from participants during the workshop that at the onset of rains, during the month of May they generally gathered different types of mushrooms, 'colorado', 'cresta de gallo', 'quemado', 'rechum', 'olote', 'xch'kbilak' and 'hongo

blanco'. Mushrooms are cooked mainly in 'recaditos'[10], or grilled on the 'comal'[11] (griddle) and consumed with 'tortillas' or 'tamales'. Participants mentioned that men seemed to have better knowledge about where to collect the mushrooms from due to their frequent ventures into the forests and their ability to recognise the type of trees where mushrooms tend to be more abundant.

Occasionally men hunt in the forest or 'milpa' for small rodents such as 'tuzas' (gopher), squirrels, coati (*Nasua narica*) and opossums (*Marmosa mexicana*) for food. These animals are also hunted to prevent them damaging the 'milpa' or plants in the plots and coffee groves. Furthermore, children collect caterpillars called 'nosh' (from the bark of the trees), which serve as a good source of protein for households and are consumed as snacks.

4.4.4.2 Food products purchased from outside the community

In the community, there are three small shops where people purchase their groceries. They usually buy key non-perishable household items from these grocers. They occasionally bought fruits that are not generally grown within the community such as mangoes, oranges, watermelon, and melons that are cultivated on the hotter coastal plain. Participants also shopped at the supermarket at the nearest town as they were of the view that they got good value for money for their groceries at these supermarkets.

It was evident during the interviews that the participants generally bought red meat and fish from vendors who sold these products in the communities twice a month. The vendors rarely sell pork hence the household needs for pork was generally met through purchases made from the market in the nearby town of Cacahoatan. Fresh vegetables (generally grown free of agrochemicals) are occasionally bought from a vendor who sourced these produces from nearby villages in Guatemala.

Households in general, did not consume processed or tinned food unless they receive it from the government food aid program as part of a basic groceries basket. These are usually provided to families in rural areas and include food products such as tinned tuna, sardines, beans, noodles or pasta and cereal for the children.

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[10] Recaditos is a sauce that consists of a mix of maize dough, ground roasted seeds of squash, coriander and 'achiote' (*Bixa Orellana*).
[11] A large metal plate typically used in Mexico and Central America to cook tortillas

Households occasionally buy maize from the shop in the community when they do not have enough at home or alternatively, maize is purchased from other households. The maize sold in the shop generally comes from other regions in the country. The participants mentioned that they are not aware of where this maize is produced.

4.4.5 Importance of the landscape and places for the households

The agroecosystem ('milpa', forest, coffee groves), and the landscape in general are important for the participants not only as sources of food; they also provide non material benefits. For instance, owning a plot of land seemed to be related to the sense of happiness and freedom because they have the opportunity to go to work in the 'milpa' and coffee groves. This is evident from the following quote from the participant's responses.

> "Sometimes, I go and harvest the maize up in the mountains, I go and harvest the coffee, I get up early and prepare my breakfast and lunch so when I return home later I just heat it up and eat it. My sister tells me, you shouldn't go because you are working too hard. But I like to leave the house, I like to walk in the fields. I like to go and look for plants to pick, it takes your mind of other things, here in the house I'm like, I need this or I need that, but up there one's mind is clearer, you feel happier walking. Yes, I like leaving the house and village" INT-006-BJ

Furthermore, participants appear to be proud of the sources of food and their land, and this sense of pride was one of the main reasons for taking the photographs of the landscapes. They wanted to show the consumers at the organic farmers market the diversity of local products they are able grow, the inputs used and the plots. See photo (Fig 4.3) below.

Figure 4-3 "La ‘milpa’ de tres caminos" ‘milpa’ planted in April 2016. Photo taken by Irma Velazquez. “There I was in the ‘milpa’, over there in the mountain, it is really cold. I was wearing my jumper”.

It was evident from the interviews that participants tried to make connections with consumers in the city while taking the photographs. Taking photographs could be seen as a way to educate the consumers. For instance, participants mentioned that consumers do not know how maize is nixtamalized to make proper tortillas with fresh maize dough. Consequently, six of the participants took photographs of this process.

4.5 Preparation: Preference for ‘natural’ food and native varieties of maize

As stated in the framework the preparation of food comprises three subphases. The preliminary work, cooking and dishing up. However, other aspects need to be considered such as who cooks, and or to whom, and the technology of cooking.

While trying to identify the practices associated with food preparation it was evident that the most important place in the household during the day is the kitchen; it is the hearth space of the residence for cooking food. In the kitchen there is always a wood-burning stove with a rustic chimney, a dining table with chairs in front of the stove, and small wooden shelves for food, plates and cutlery as in the photo below.

Figure 4-4. Photo taken by Tenchi's son. We know the flower as flor de guinte, but in the Tianguis the consumers call it flor de izote.

> First, we pick the petals… Inside the flowers, there are some green fruit which aren't eaten as they're bitter, that's why we pick the petals off. Only the white part is edible, which is boiled in a pot. You only boil it a little as it's a bit like cabbage, it cooks quickly. Once it's ready, its placed in a colander and then a frying pan where several eggs are mixed in with it. INT-005-BJ

During the interview the participant explained details of the preparation of an edible flower *Yucca* spp and she also noted the different names of the plant. The Yucca plants are grown in the home gardens and in the coffee groves to prevent soil erosion on the slopes.

The kitchen is also used to store the maize seeds for the following year. When households do not have sufficient seeds, for example due to bad weather or pests, they borrow seeds from their neighbours. Sharing seeds for the next sowing period is a common social practice in the community and it was important for the participants.

It was evident from the interviews and the observations conducted in the community that women are in charge of the cooking and preparing tortillas, and women decide what to cook depending on the availability of ingredients. Only in one interview, it was mentioned that when the

participant was ill her husband made some tortillas and cooked some food for household consumption, and he was very proud of this.

It was observed that women who participated in the farmers market go to bed very late as they need to prepare the food and products the night before. They generally get up early on market day around 3 a.m to pack the food in the truck and leave before 5 am. Consequently, cooking for two consumption spaces such as the households and the 'Tianguis' represents more workload for women. One of the participants described the adjustments she had to make to sell her products at the "Tianguis".

> "when I have some chicken, I tell my children that I am going to make some tamales, and I'll leave them some and they can help themselves. That way it's easier for me to get up so early and easier for them as they don't have to worry about cooking because the food is already made. I just leave them some grilled tomato salsa on the table" Ent.005-BJ

In the photo below, the participant shows some of the vegetables such as different varieties of '*chayotes*' and '*verduras*' which are sold at the 'Tianguis'. When she was describing the photo she explained that she does all the preparation the evening before the 'Tianguis' thus she can pack quicker in the morning.

Figure 4-5. Photo taken by Silverio Verdugo. Herlinda arranging the edible flower 'guisnay' and 'berro'. Watercress (berro) grows next to the river and there it looks beautiful.

4.5.1 Preference for natural food

Maize tortillas and beans were clearly the staple food of the community. Predominantly, maize from the 'milpa' rather than industrialized maize flour was used to prepare tortillas. However, occasionally industrialised maize flour may be used when time is a constraint, particularly for households with young children.

During the interviews with the participants, it was evident that traditional cuisines played a central part in food preparation and consumption within the community. Participants usually prepared 'recaditos', 'caldos de verduras'[12] and tamales stuffed with leafy greens or beans.

Another key aspect evident from the interviews was that food consumed within the community were generally sourced from the areas as discussed in the above sections ('milpa', coffee groves, forest, and homegardens and to a lesser degree from the shop or market). The interviewees described that most of their food was produced without any agrochemical inputs. Preparing a meal was described as simple and involved basic preparations and they used the term 'natural' to describe this. Appendix IV. B shows evidence of source of ingredients and the type of food prepared in the households.

Further exploration revealed that by the term 'natural' referred by the interviewees denoted food cooked plain with just salt and onions and avoidance of oil and any form of artificial flavourings. For instance, it was observed that in the community most of the tamales are made with maize dough and a bit of cooking oil, unlike in most urban and rural areas where people would add lard to the maize dough.

For the participants, the emphasis on natural food free of additives appeared to have strong values associated with both their health as well as that of the agroecosystem. The practice of carrying out food preparation with ingredients from the surroundings was prevalent in the community.

[12] Caldos: is a broth where the main ingredient could be chicken or any leafy green. It is cooked with water, salt and in some cases spices like onion, garlic, and thyme are added.

Most of the participants took photographs of their main daily dishes such as leafy green, beans and squash ‘caldos’. In the list of main dishes and drinks prepared and consumed by the participants (Appendix IV.B), there are more than 45 different dishes where the main ingredients come from the ‘milpa’, coffee grove or the homegarden.

Figure 4-6 'Caldo de gallina' ckicken stew, eaten by the whole family. We eat the stew with ‘tortillas’, we could add watercress salad and chilli. Photo taken by Eulalia.

The awareness about eating “comida natural” natural food was reflected by one participant who generally bought the ‘limestone’ from a vendor and made slaked lime (calcium hydroxide) which was used for the nixtamalization of the maize to prepare tortillas. She was of the view that the limestone sold in the shops was on the whole of inferior quality and unhealthy. The importance of “comida natural” for households is also reflected in the organic farmers market. Even the name of the ‘Tianguis de productos naturales’ echoed the importance of this classification for the farmers.

In addition, a significant fact evident from the interviews was that participants preferred native maize varieties (yellow or white) to make tortillas and ‘pozol’[13]. However, the participants also claimed that at the farmers market, urban consumers preferred to consume white over yellow tortillas.

[13] Pozol is a fresh beverage made with fresh maize dough and water.

4.6 Food consumption: Kitchen as a meeting space for sharing practices

As discussed in the main concepts of the framework section (3.4.1) in order to understand the consumption of food phase the assembling of the participants, the serving of the food, who eats with whom (the consumption group) was analysed.

The kitchen is the centre for consumption practices in the household. Adult members of the households gather for breakfast before going to the 'parcela' or 'milpa' early in the morning, followed by children having breakfast before going to school. Adults and children generally would consume beans 'caldo' or eggs accompanied with 'tortillas' and coffee. This beverage is a blend of a very diluted coffee and sugar. Sometimes they would consume 'atole de maiz' for breakfast or supper.

Lunch time is around two or three in the afternoon and household members would gather together again to enjoy tortillas and food prepared mainly with '*verduras*' (leafy green vegetables) and beans. It was observed that women are generally responsible of preparing tortillas twice a day, for breakfast and lunch. Supper time is around seven pm, household members would eat the leftovers from lunch or will have coffee accompanied with sweet bread from the shop.

Mainly women cook the meals and serve food for the male and children the households. The photo below illustrates the consumption practices in the households.

Figure 4-7 My mother in law, my husband, sister in law and my daughter were having dinner. Photo taken by my son Silverio. "We were eating 'isiche' beans and tender beans in 'caldo' with tortillas".

Sharing food is a common practice in the community, people usually visit each other during the day, particularly women and children. When people arrive during a mealtime they are usually invited to eat or have a cup of coffee in the kitchen.

For celebrations such as Christmas eve, New year's eve, and other religious celebrations they consume special food such as 'barbacoa de res or borrego', 'pozole', 'mole', 'tamales', 'caldo de res'. This food is generally consumed in the region for festive days. One participant stated that they preferred to buy the beef or lamb from people they now well in order to consume meat that is more natural.

4.7 Knowledge associated with food

Following on from the discussion on the different manifestations of the repertory of knowledge in section 4.1, the intangible, immaterial and sometimes subjective representations, sense of belongings, affections and preference towards food production, preparation and consumption processes in the community is analysed in the following section. Identifying first the culinary practices and then the knowledge attached to food is a key element to understand food culture in different contexts in a determined society or group.

Respect for the land and elderly people identified during the analysis of interviews, photos and workshops. Additionally, women as agents of culinary knowledge, knowledge about cultural classification of food and respect for traditional food were identified during the analysis of the data.

4.7.1 Respect for land rooted in knowledge

It was evident from the interviews with the participants that land is held in high esteem as a provider of food. With this key premise, land commands immense respect from the people. Similarly, community elders were revered by the younger generation for the wealth of knowledge and traditions they uphold. One important ritual that exemplifies the links between food preparation practices, and sources of food and local knowledge was succinctly described by the participants. This ritual, called "el corte de hoja", is practiced annually by households. It consists of a family member cutting leaves from the maize plants (not the husk) and taking them home, and then an elderly family member generally conducts a prayer to ask God for good results in the harvest. The ritual as stated by the participant is described below:

> "Yes, but the tamales are wrapped in the leaf (for cooking) from the maize plant, and then the leaf is removed. The first tamales that are eaten are placed on someone's plate and all the family members and the guests are stroked with the maize leaves. This is our custom, well my mother in-law says in her language ('Mam')...that everyone touches the leaf and says: *kan kan kan kan* let your work bring results…that's our grandparents, great-grandparents. And the custom continues". INT-005-BJ.

During the celebration, 'tamales'[14] and the chicken broth are served to the household members and relatives who are invited.

4.7.2 Women: agents of culinary knowledge

It was evident from the interviews and workshops that culinary knowledge is a key pillar for the cuisine in the community. Participants expressed they learnt to cook when they were young. Female members of the households are responsible for the transmission of knowledge about natural ingredients. It was evident from the interview that females cook with the same recipes and similar utensils as they were taught by their mothers or grandmothers. In the following quote a participant clearly describes the way her mother prepared one of the dishes.

> "When we were young, my mother taught us how to cook, for example, verduras...my mother always said "I'm going to make my molito" so my mother would add quishtan[15] to it. My mother prepared it with 'achiote', potatoes and would add a bit of quishtan and some coriander seeds. When the food was ready, it was delicious…how it smelt of coriander, it smelt delicious. My mother prepared this meal before, and still does today". INT-008-BJ

Participants also expressed the importance of the staple food tortillas and leafy green 'caldos' in their diets. One important characteristic associated with staple food was identified by two participants; they reminisced that when they were young sometimes, they did not have sufficient resources to buy food, although tortillas, beans and atole[16] were available.

> "We just ate mainly vegetables, sauce (grilled tomato sauce), beans and eggs, I told people about that in the meetings, and told my daughters, no... before we never went without a bowl of sauce". INT-003-BJ.

> "Neither did we drink much coffee, I remember my mother, she drank more 'atolito' ('atole'). In the morning, atolito, midday and again in the evening. We did not have enough money, not even for sugar". INT-03A-BJ.

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[14] Tamales: a main dish made with maize dough that is steamed folded in a banana leaf, C*alathea lutea* or in canake leaf (*Quercus candicans*). Tamales are generally stuffed with chicken or other vegetables
[15] Quishtan (*solanum wendlandii*)
[16] Atole or also called atolito: is a hot drink made with nixtamalized maize fresh dough and sugar

It was evident from the quotes that the knowledge that these staple foods were always accessible to some extent provided the participants with a feeling of security.

In summary, women possess knowledge about the diverse possibilities that households can harness to grow or collect food products from the available sources of food. This knowledge about the environment allows the households to have a wider range of food.

The interactions in the 'Tianguis' has allowed women to pass their culinary knowledge to other social actors such as farmers from other communities and consumers from the city. During an informal conversation one of the participants mentioned an anecdote that illustrates this. The participant mentioned that at the beginning of the establishment of the 'Tianguis' consumers had never seen the different leafy vegetables from the mountain communities. However, interest in such food preparations increased among consumers after the participants in this research sold food prepared with a leafy green commonly referred to as 'pata de paloma' (pigeon leg because of the tender red stem). The participants went on to state that they had to clarify the misconception amongst consumers that 'pata de paloma' was a leafy vegetable and not actual pigeon legs. Consumers were also keen to find out different ways of cooking this vegetable.

4.7.3 Knowledge about cultural classification of food

During the workshop participants' in-depth knowledge towards food preparation and consumption were explored. Responding to these explorations, the participants recognized two types of food, which they classified as "cold" and "warm". The knowledge seemed to be focused on some important events. For example, postpartum women should only consume "warm" food. During the first few days, these mothers consume food without fat, vegetables, free-range farm eggs that are hard-boiled or in a broth and potatoes.

The local farm chicken broth is a special food given to postpartum women. They can also eat an egg tortilla made from maize dough mixed with egg and cooked over a griddle without using any cooking oil.

The plants that are found in the coffee groves or in the 'milpa' are generally considered "cold" and of these, they can only eat the tender leaf of the 'capote' (*Xanthosoma sagittifolium*) and quishtan (*Solanum wendlandii)*. Meals can be accompanied by tomato sauce and dried chilli, as fresh green chilli is considered a "cold" food. Regarding to drinks, the women can drink herbal infusions such as 'salvia santa' (*Salvia leucantha*) or sage, camomile is considered as "warm".

Participants also mentioned a practice related to the pospartum process. Postpartum women could take a hot 'temazcal[17]' steam bath with aromatic plants and drink an herbal infusion to clean their womb. Participants mentioned this practice has almost disappeared, as there are no 'temazcales' in the households. They mentioned that their grandmothers used to prepare this herbal infusion, but they do not have the knowledge.

4.8 Discussion:

The aim of the chapter was to explore the culinary practices and culinary knowledge of households in a small rural community and identify whether social processes such as alternative food networks (i.e Organic farmers' market) influence their knowledge and practices. The provision of voice to the participants through the photo voice tool in this research enabled a better understanding of local processes associated with food production and consumption practices in a rural community, specifically when they were closely linked to alternative food networks.

The themes that emerged from the analysis identified in production, preparation and consumption phases indicated the importance of agrobiodiversity such as 'milpa', coffee groves and home gardens as a whole and the food they collect from the forest, while households are less dependent on foods purchased from other sources.

In terms of food it was also evident that the main preparations consumed in the households consisted mainly of dishes with 'verduras', different varieties of beans and 'tortillas' and food prepared with nixtamalized maize dough such as tamales, atoles and pozol. Households preferred 'natural' ingredients and traditional recipes for the food preparation.

It was also evident from the findings that household members, particularly women play a crucial role in the production and reproduction of culinary knowledge and through food they have shared knowledge with diverse actors in the Soconusco region.

The distribution phase described in the framework will be analysed in chapter V with the interactions with consumers in the social space constructed, 'Tianguis'.

[17] 'Temazcal' is a steam bath used in the traditional medicine in the Mesoamerican region and consists of a very small room where women take a steam bath combined with medicinal plants

4.8.1 Role of women in culinary practices, knowledge transmission and agency.

Section 4.2 in this chapter clearly emphasised the importance of household organization in the management of the 'milpa', home gardens, coffee groves, the activities for preparation of food and participation in the farmers' market. As mentioned in section 3.2.2 it is important to reflect on the way women and men negotiate responsibilities for food provisioning and distribution at the household level when participating in a new arena such as the farmers market.

As discussed in section 3.2.2. food study researchers present contrasting ideas on whether food work provides women, power in the households or reinscribes their subordinate gender role (Allen and Sachs Carolyn, 2012). In this research women appeared to be the food providers both at the household level and when it comes to managing their livelihoods. Women were involved in the homegardens activities and worked in the 'milpa' in addition to active participation preparing food or selling vegetables in the 'Tianguis'. Men are predominantly responsible for activities related to the 'milpa', plots and coffee groves.

With regard to the work that women carry out in their homegardens, Benitez-Kanter et al (2020) found that men in the Sierra region in Chiapas have greater decision making power over the production of edible plants in the homegardens and women decide what animals to look after and ornamental and medicinal plants to grow. In contrast, in this research women tend to make the decisions concerning all the plants and animals in the homegarden, as they are responsible for this productive component which contributes to supporting their livelihoods through household consumption and income generation at the 'Tianguis'.

Thus, it could be argued that the homegardens are resources that contribute to the process of women's empowerment. Women are responsible for contributing income to the household more frequently and over a longer period of time as the main income from coffee production is only generated during the harvest period. This diversification in income generation reduces dependency on the coffee crop, therefore somewhat providing an economic buffer against external factors which the farmer has no control over, such as fluctuating coffee prices, thus reducing household vulnerability.

In addition to the income derived from the sale of food products, there are other social benefits that women have gained from participating in the farmers market. They have acquired experience in group leadership, social organizations, communication, knowledge on agricultural practices

amongst other skills, and are more visible within the community. One participant used these capacities when gaining the position of "comisariada ejidal" (community head).

It was discussed that cooking for two consumption spaces such as the households and the 'Tianguis' represents more workload for women and they have learnt to make adjustments to their daily routine in order to participate in the 'Tianguis'. Women required support from other female members of the household, for example, daughters, grandmothers, or daughters-in-law to ensure they had sufficient time to participate in both the farmers' market and routine household activities. Nigh and Gonzalez (2015) draw similar conclusions from their research stating women tend to have a double workload as farmers and household managers. Little, Ilbery and Watts (2009) argue that if women perform less work on the domestic front and engage other to prepare households meals, that labour is invariably carried out by other women.

It was also clear that young men were more involved in food preparation activities and serving food for the consumers in the farmers market, thus it could be argued that this type of alternative food networks is slowly modifying attitudes towards gendered stereotype activities in public spaces. These reconfigurations or renegotiations of gender roles could be due to the ability of women to express their voice and construct agency through food. Therefore as Adapon (2008b) argues, women are expanding their autonomy.

Nevertheless, in the household's arenas these gendered activities are accepted as female duties. One of the possible drivers of these changes could be related to the education level and age of the participants, the frequent relations with the consumers in the city and the training acquired through the farmers market activities.

As discussed in the literature review De Vault (1991) argues that the kitchen could be considered as an oppressive space that limits women's ideological, social and economic freedom. However, in this research food appears to provide women a certain level of social and economic freedom, considered as resources for empowerment, even though they are in a patriarchal system they have the ability to take decisions in their households that benefit their livelihoods.

4.8.1.1 Knowledge

As discussed in the framework section the second core concept considered in the research was culinary knowledge considered as an important element of local or indigenous knowledge.

Culinary knowledge is based on practice, which can be learnt and developed with practice and reproduced by direct dialogue.

In the present research it has been argued that is women who pass down the culinary knowledge from one generation to the other. This role associated with culinary knowledge contributes the possibility of continuity of this type of diet based on local production and the link to the conservation of the agroecosystem. Pilcher (1998, p.161) states "cuisines live and grow as long as people continue to cook them, changing ingredients and techniques perhaps, but still respecting those who cooked before them". Thus, the role of women as culinary agents in passing down the culinary knowledge is crucial for rural populations.

The findings highlighted that households have been consuming traditional cuisines for at least two generations and there was a sense of pride in adhering to these longstanding food practices and customs. This knowledge is reflected in the diversity of food preparations, more than 40 dishes prepared with ingredients from the 'milpa' coffee groves, forest and homegardens. Drawing from Gvion (2012) discussion about theoretical and practical knowledge women in the present research have the ability to select ingredients for food, techniques for cooking such as selecting the right wood for making tortillas or cooking beans.

Furthermore, women are aware of the importance of their natural food and generally cook leafy green vegetables and aim to produce more to satisfy both household consumption and to sell at the organic farmers market. Coinciding with the findings of Chambers and Monsen (2007), it was evident that female knowledge about maize and leafy green vegetables is not limited to the kitchen; as the women also participate in diverse agricultural activities they have the ability to identify the different characteristics of the plants that are useful for their cuisine, as well as the management of the plants in the plots, or in the milpa.

Furthermore, participants had acquired a deep cultural knowledge associated with natural food, for instance the knowledge associated with the consumption of "warm" and "cold" food. The classification has been used since the pre-hispanic period in Mesoamerica (Bertran, 2006). This type of knowledge is shared by most of the indigenous population in Mexico and Latin America and Vargas (2013, p.74) explains that "food acquires properties from the two broad divisions, heaven understood as male and earth as female. However, although participants had knowledge about warm and cold food, they do not relate it to the divisions mentioned by Vargas. Two

participants mentioned that postpartum women have special teas considered warm; this was also found in another study where women avoid cold food during these period (Alvarez-Quiroz et al., 2017).

4.8.2 Natural food rooted to cultural identity

It was evident from the findings that the degree of importance the research participants placed on "natural" food made with local ingredients and their culinary practices reflect cultural adaptation to local ecosystems. The simplicity involved in the cooking process and the ingredients used may to a certain extent reflect the respect for the cooking practices that may be rooted in their biocultural 'mam' identity, rooted in their ethnicity. It could therefore be argued that the simplicity in the diet is an evident reflection of the Mesoamerican diet.

For instance, Pilcher (1998) claims that the Mesoamerican diet was a combination of maize, beans, squash and chilies. Guerra (2017) mentions similar culinary practices in a migrant 'mam' population residing in the south of Mexico but originally from Guatemala, where it was found that the consumption of leafy green vegetables such as 'quishtan' (*Solanum wenlandii Hook*) and *Colocasia esculenta* are identity traits of the 'mam' population. It may be argued that culinary knowledge is linked to the agroecosystem and Mesoamerican food practices such as the consumption of 'tamales' during the ritual of 'corte de hoja', (leaves from the maize plant). Pilcher (1998) in his book 'Que vivan los tamales' illustrates the importance of the offerings of tamales during rituals in pursuing amicable relations with their gods. Echoing Katz (2013) analysis of food rituals carried out by the Mixteco indigenous communities of Oaxaca, the "corte de hoja" ritual in the present research reflects the significance of maize and the respect that households have for the crop and for nature.

However not all 'mam' communities are conserving this type of natural diet and this close relationship with 'milpa' or maize, for instance Escobar (2017) states that in two 'mam' communities in Chiapas, young households prefer artificial flavourings and industrialized food.

Furthermore, Medina at al. (2014) reported fourteen edible species of mushroom used by the 'mam' communities of the Tacana Volcano biosphere Reserve but emphasise that empirical knowledge related to wild mushrooms is rapidly disappearing as part of the culture of many indigenous groups in Mexico. Participants in the present study mentioned seven edible species collected mainly in the forest for culinary purposes. Andrade and Sanchez (2020) mention that

Agaricus sylvaticus or xch'kbi'lak (in mame language) are the most appreciated mushrooms in Chiquihuites, a small community in the Tacana region. Similar to this study they too argue that mam population have developed special cooking methods for the mushrooms, such as 'recados' or grilled in the 'comal'. Mushrooms are an important source of food and their culinary knowledge was clearly associated with knowledge of the areas, flora and landscape and weather conditions.

Goody (2002) argues that 'tamalitos' and 'tortillas' are the staple food and the main energy source for Mayan households in rural Guatemala. Her findings are similar to this research. The current research also coincides with Lopez-Gomez and Junghans (2018) who reported similar findings in the Tacana region where the 'caldos', 'recaditos' and 'tamales' are not only staple food for the households but they are linked to the ethnicity and cultural heritage. Overall, thus one can argue that these natural foods based on 'caldos' 'recaditos' and 'tamales' are bio-cultural markers of communities' identities and their territory.

Modernization processes are important factors that Perez et al. (2012) claims may be influencing the daily diet based on staple food of maize, squash and beans in rural 'mam' communities, making it more varied and dependant on commercial foods. Notwithstanding, in the present study it was strongly evident that research participants in the community placed more emphasis on 'milpa' than any other source for food production; this was expected as it was found that maize, squash and beans provided the staple food in the households. In addition, homegardens were important sources of food and income for households that together with 'milpa' coffee groves and forest comprised their livelihood strategy.

In a study carried out (Solís-Becerra and Estrada-Lugo, 2014) in Teopisca, Chiapas, homegardens demonstrated less importance for food as in other parts of Mexico. The authors attribute this to the local climate and to the fact that women tend to be busy with other activities in the nearby city and therefore have little time to contribute towards their home gardens. Caballero et al. (2010) state that development strategies have affected homegardens by leading to a reduction of labour invested in farming activities; however, the present study found that more members of the family participate in homegardens and agricultural activities.

In two different studies from South Africa it was found that negative attitudes towards the use of leafy green vegetables, changes in lifestyle and habitat loss could contribute to the loss of this

knowledge in many societies (Dweba and Mearns, 2011). Another factor is that they have possibly become marginalised in favour of other exotic vegetables (Bvenura and Afolayan, 2015). It is a well-known fact that in Mexico that urban dwellers identify the 'quelites or verduritas' as 'comida de pobres' food only eaten by "poor" peasants and is therefore one important reason why it is not consumed in the urban areas. In addition, in Mexico meat and processed food consumption has increased as a response of globalisation and urbanisation processes.

Bee (2014) argues that edible wild plants that grow in the 'milpa' and around the house are important sources of nutrition during periods of drought in central Mexico. This was also evident in the present research when in cases of adverse weather conditions; households have their main sources of leafy green vegetables and maize. Fernandez et al. (2013) and Morris et al (2013) claimed similar findings in other regions in Mexico and Central America where leafy greens from the coffee groves are an important source of food during short periods of food scarcity and are an integral part of the food culture. Quave and Perioni (2015) also argue that traditional knowledge of the wild edible plants could be a reservoir of resilience and influence community survival during challenging periods.

The evidence provided in the present research shows the participants visit the organic farmers' market twice a week to sell their produce (including leafy greens vegetables), where they are exposed to a range of consumers who could arguably influence the way these participants source, produce and consume food. However, interestingly, these communities have not allowed themselves to be influenced to the extent that it affects their food cultural identity.

There have been instances where the participants have mentioned the preferences of consumers at the farmers' market, for example consumers preferring white maize tortillas over yellow. The participants have ensured that they supply the white maize tortillas that are more in demand. In general, the urban Mexican population and the tortilla industry prefer white maize over yellow (Appendini, 2014); however, participants themselves prefer to consume the native yellow varieties. Brush and Perales (2007) state that this preference is also demonstrated by other indigenous farmers in Chiapas and other rural areas of Mexico. Maize production plays an important role in household livelihood strategies and food security (Eakin et al., 2015) and other scholars (Appendini, 2014; Appendini and Quijada, 2016; Sweeney et al., 2013) have argued that since cultural values are still prevalent in rural communities, smallholders continue to grow maize for household consumption if they have the resources to cover inputs.

By selling their produce at the farmers' market, the research participants claimed that they acquire an income and are able to inform the general consumer of the range of food items rural inhabitants consume. This highlights the fact that they have a strong sense of identity when it comes to food and that they enjoy showcasing their food culture to the rest of the population. The farmers market serves as a driver that helps the participants to reflect about the values and characteristics of the local agroecosystem. Again, this signifies the fact that these participants tend to act as active agents in disseminating culinary knowledge and features of the rural agroecosystems to urban areas. In this case, food also serves as a tool to connect farmers and consumers in a broader territory such as the Soconusco.

Selling produce such as food from the 'milpa' and coffee groves with value added, could represent a strategy for conserving agrobiodiversity in situ, which could have the potential to improve farmers' livelihoods (Keleman and Hellin, 2009).

Chapter V. Tianguis a space for social innovation. Exploring consumers' food preferences and interactions between social actors.

5.1 Introduction

Under the umbrella of alternative food production systems, a question emerges what the motivations and food preferences of the consumers in a local farmers' market are. How could these motivations, food preferences and interactions between actors (farmers and consumers) lead to changes in culinary practices in the Soconusco region. This chapter mainly explores the culinary preferences of consumers and the impacts thereof on shifts in culinary practices on small scale farming system.

In order to answer the main questions of the chapter mainly structured interviews were conducted with consumers of Tianguis de Productos Naturales y Organicos el Huacalero. Additionally, key information from the observations made and interviews with the participants in Benito Juarez el Plan were used to acquire an overall understanding of consumer preferences towards culinary practices in the region. Fifty structured interviews were carried out in the 'Tianguis' in Tapachula. A detailed description of the structured interview is given in section 3.5.5.4.

The chapter is divided into seven sections. Following the introduction, the results of the analysis are presented focussing on the findings in the 'Tianguis'. Section 5.2.1 presents the consumers profile; 5.2.2 Motivations of the consumers; 5.2.3 focus on the challenges and opportunities for the farmers; 5.2.4 analyses the dialogues between farmers and consumers and 5.2.5 presents an analysis of the 'Tianguis' as a place for innovation. Finally, discussion of the main findings of the chapter is presented.

5.1.1 Characteristics of the Soconusco region

The Soconusco[18] region is dominated by agribusinesses, which has been a pillar of regional economic development. The economic activity of the region depends on coffee, banana and mango production which represents over 80% of total agricultural production (Santacruz and Perez, 2009). From 2003 to 2014, the area of land dedicated to agro-industrial plantations has experienced productive reconfigurations at the microregion level (Acapetahua, Mapastepec and

[18] Soconusco region is located in the southeast of the state of Chiapas, Mexico and is comprised of the municipalities of Acacoyagua, Acapetahua, Cacahoatan, Escuintla, Frontera Hidalgo, Huehuetan, Huixtla, Mapastepec, Mazatan, Metapa, Villa Comaltitlan, Suchiate, Tapachula, Tuxtla Chico, Tuzantan, and Union Juarez

Villa Comaltitlan). The area has witnessed a significant increase in the production of palm oil while products that have seen a decrease in the area of cultivated land are more traditional crops such as maize, sorghum, papaya, and grass for cattle raising (Trejo Sánchez,Valdiviezo Ocampo and Fletes Ocón, 2018). These studies also note that in the La Encrucijada[19] Biosphere Reserve out of the 144,868 hectares, 35, 405 are occupied by palm oil cultivations. Trejo Sánchez, Valdiviezo Ocampo and Fletes Ocón (2018), claim that the increase in palm oil production can be attributed to a response in the internal market where there is a deficit in vegetable oil production and to further promote the agro biofuels. The change in land use has resulted in these new areas becoming dependent on fertilizers that contribute to a loss of soil fertility, eutrophication of bodies of water and a decrease in the availability of food (Rangel and Fletes, 2010). The above studies also point out that producers in the municipality of Villa de Comaltitlan have planted mango and palm oil in recent years and no longer plant maize, melon, sesame, banana, orange and soursop (*Annona muricata*) (Rangel and Fletes, 2010). These plantations also have an effect on ecological plant succession; for example Grimaldi (2015) highlights the natural spread of non-native palm oil trees (*Elaeis guineensis*) in a Soconusco community thus affecting the local vegetation.

In the uplands of the Soconusco region the context is different, the uplands are well known for their coffee production. The coffee landscape is diverse where small shade grown plots are owned by peasants families that may coexist with large coffee plantations that also practice shade-grown agriculture for export (Jimenez-soto, 2020).

Although export agriculture is the key activity, the region is economically undeveloped (Santacruz and Perez, 2009) and this is reflected clearly in the socio-demographic data. The municipality of Cacahoatan demonstrates high levels of marginalization, with 11, 289 inhabitants in extreme poverty (27%) out of a total population of 40,968. In contrast, Tapachula, the main urban area in the Soconusco region presented lower levels of marginalization in 2015 when compared to the aforementioned rural areas; out of a population of 403,754 inhabitants, 48,500 inhabitants or 12% were categorised as being in extreme poverty (Coneval, 2015).

[19] La Encrucijada Biosphere Reserve is located within the municipalities of Acapetahua, Huixtla, Mapastepec, Mazatan, Pijijiapan and Villa del Comaltitlan.

In this chapter the culinary preferences of consumers in the 'Tianguis' in Tapachula and the challenges for farmers are explored. By exploring the culinary preferences of consumers the research aims to identify its impacts on small scale farming systems.

5.2 Results:

This section will discuss and analyse the structured interviews carried out in the 'Tianguis' in the city of Tapachula, located in the state of Chiapas, Mexico.

The 'Tianguis' was initiated in 2007 intended for one day a month, however currently the 'Tianguis' operates three days a week (Saturdays, Sundays and Wednesdays). Small scale farmers travel from different municipalities located in the foothills of the Tacana volcano, within the municipalities of Cacahoatan, Tapachula, Tuxtla Chico in the Soconusco and one community from Guatemala to sell their wares at the Tianguis. The farmers sell different produce such as ornamental potted plants, fruits, leafy greens 'verduras', vegetables, flowers, coffee, chocolate tablets to prepare hot chocolate, honey, maize dough, etc. Farmers sell prepared food such as quesadillas, free range chicken stew, tamales, tostadas, battered 'pacayas', grilled plantains, etc.

5.2.1 Exploring consumer's profile

The basis for conducting the structured interviews with consumers in the "Tianguis" was to explore the culinary preferences of consumers and its impacts on shifts on the culinary practices on small scale farming systems in the Soconusco region.

Fifty structured interviews were carried out on the 4th, 11th, 12th and 15th of February in 2017. Thirty consumers were female and twenty males. Twenty-seven consumers had attained a university degree, 9 masters degree, 9 with other levels of study while three people completed secondary school education. The high education level could be explained by the 'Tianguis' being located in front of Ecosur (Research Institute), a high school and near a hospital. Most of the consumers came from the main city, Tapachula, and only four were from different areas of the Soconusco region.

5.2.2 Motivations of the consumers

The reasons and motives expressed by consumers for visiting the 'Tianguis' were examined during the interviews. The keys reasons cited by them included 'Tianguis' as an important social space in the city, a place where they can buy local, organic and natural food, the taste of the food and nostalgia associated with past, when more traditional foods were consumed.

5.2.2.1 The 'Tianguis' as a social space

The 'Tianguis' is seen by the consumers as a place to socialize with people and family under the shade of a large tree 'la Ceiba' *(ceiba pentandra)*, the 'tree of life' as perceived by Mayans. According to the consumers views the 'Tianguis' is a good place, in the city, where they can meet people and socialise with family that come together to eat local food.

The quotes below succinctly explain the motivations for visiting the 'Tianguis'.

> "We visit the Tianguis because there is a family atmosphere, music, and chatting with friends". Consumer fromTapachula.

> "It is pleasant to eat in the open air underneath the 'ceiba' tree". Consumer from Tapachula

The farmers pay a local 'marimba' music group and they play on Saturdays and Sundays in the 'Tianguis'. It was observed that consumers visit the 'Tianguis' along with their children, or friends and they usually have breakfast or early lunch there. Large tables with benches are arranged to provide a welcoming and social setting conducive for people to eat and socialise with their friends.

5.2.2.2 Local food

In order to analyse consumers preferences, they were asked about the food they purchased when they visited the 'Tianguis'. Forty-eight interviewees stated they consumed food in the 'Tianguis'. The most popular product was handmade maize 'quesadillas' stuffed with different ingredients (organic cheese, steamed leafy greens or 'verduras'), followed by free-range chicken stew with 'tortillas', and tamales. Consumers listed a range of products they consumed while they visited the 'Tianguis' which included 'battered pacayas' (*chamaedorea tepejilote*), grilled plantains, battered watercress, 'guinte flowers' (yucca flowers), 'tostadas[20]' with leafy green vegetables. They also bought some drinks such as natural fruit squash, 'atoles' and filtered coffee.

The main ingredients for the preparation of quesadillas sold at the 'Tianguis' are generally cultivated in the region, for example the leafy greens are picked in the 'milpa*'* or coffee plantations. The 'quesillo' (cheese) comes from the central region of Chiapas, made by a cooperative organic farm and the maize from their own 'milpa' in Benito Juarez el Plan.

[20] Tostadas are crispy tortillas on the griddle, normally this type of tortillas in the region are deep fried in cooking oil.

Motivations for visiting the 'Tianguis' for the consumers when interviewed highlighted the fact that for them 'Tianguis' is a place where people can buy and eat local food. For example, one consumer expressed:

> "The Tianguis is a place to experience the food culture of Tapachula". Consumer from Tapachula.

Other than consuming and purchasing food the interviewees also stated they bought products such as potted plants, fresh vegetables such as tree tomatoes, 'chayotes' 'camote', chillies, and fresh fruits mainly bananas and plantains (29). Five consumers noted they also bought leafy green vegetables such as 'yerbamora', 'pata de paloma', 'quishtan' and 'capote' to cook at home. This could be interpreted that the consumers have learnt to cook with the local 'verduras' from the uplands sold by the farmers. Consumers also bought honey, grounded coffee, cheese and maize dough.

5.2.2.3 Natural food and organic food

For the interviewees, the 'Tianguis' is a place where they can obtain 'natural food' "agrochemicals free food". The term 'natural food' was mentioned several times and was linked to ecologically produced and foodstuffs without artificial preservatives.

> "The chicken stew is very nutritious, safe, natural and without any chemicals; the chicken is delicious as the poultry is fed with natural food". Consumer from Tapachula.

> "El sabor a rancho (the country farm taste) motivates me to visit the Tianguis; it is safe, natural and without chemicals". Consumer from Tapachula.

Another important motivation to visit the 'Tianguis' was that consumers could purchase healthy food from the 'Tianguis' as is highlighted in the quote below:

> "Organic food is healthy, and it detoxes your body, it doesn't have any chemicals". Consumer from Tapachula.

In addition, consumers also mentioned that in the 'Tianguis' they could buy organic food at reasonable prices that are accessible to consumers. Regarding the prices of organic food, only one consumer stated that the food is expensive but definitely of good quality.

5.2.2.4 Food: tastes and nostalgia for the past

Another motivation to visit the 'Tianguis' was linked to the taste of food from the countryside. The taste of the food bought or consumed from the 'Tianguis' were compared to earthly flavours

highlighting the freshness and wholesomeness of the food. One of the consumers used the following expression to express the flavours experienced:

> [Food from the 'Tianguis'] "has an aroma of wood because food has been cooked on the wood stove". Consumer from Tapachula.

Consumers further mentioned the importance of the 'Tianguis' in selling handmade maize 'tortillas', because in Tapachula there are no places where people can buy 'tortillas' made with fresh maize dough. It was observed that most of the 'tortilla' shops in the region used industrial corn flour. The large supermarkets also sold tortillas made with industrial corn flour at cheaper prices compared to the 'tortilla' shops.

The motivation behind visiting the 'Tianguis' for the consumers also included for example nostalgia associated with childhood or similar past experiences as is highlighted in the following quote:

> "Coming to the Tianguis means remembering my childhood and how we ate before". Consumer from a neighbouring region.

Further on this topic, one consumer her main reason for visiting is as follows:

> "The Tianguis is a place to recover species used for food and traditional cooking methods". Consumer from Tapachula.

Interestingly the motivations were linked more to the importance of the 'Tianguis' for the social, cultural aspects and benefits for human health, and only one consumer linked her motivations to the conservation of species for food.

5.2.3 Challenges, agency opportunities for the farmers

The participants expressed that they have learnt different skills throughout the "Tianguis" as a social organization. In the quote below, the participant describes the challenges that the group of women in Benito Juarez faced when they joined the 'Tianguis'. Back in 2007, this local group was selling plant pots in the nearest town and working with CONANP and IUCN to look for productive alternatives in the Tacana Volcano Biosphere Reserve.

> "We went to a meeting at Exoticos (local restaurant), and there we met the agronomist Raul and he asked Eulalia if we wanted to participate in the Tianguis, that's where the opportunity arose. When Eulalia arrived, she asked us all if we were interested. She said let's go and see what it is. Let's try, let's go, we can form a group, or groups of five. Let's

> look for a car to take us, so we can make the journey. Sometimes they didn't come to pick us up. Sometimes there would be five of us waiting for the transport, but they would let us down and never arrive. We would be waiting at three or four in the morning. So we would go to Bellavista…we would walk there and back through the forest, in the dark. One day my son told me off with the three of them looking after the smallest. He asked me what are you doing out so late, it's too late to be coming home. I'd leave and return home in the dark. My son would say, oh mom, do you make any money? Sometimes we would, sometimes we wouldn't. Occasionally I would earn 30 pesos, other times I would lose money, 20 pesos, 70 pesos. So sometimes I would be discouraged and lose interest…and more walking. Gradually we were motivated, then they said Mario was coming back (from US), we can ask him to drive his truck. INT.003.BJ

The participant narrative could be interpreted as perseverance, self-determination and confidence to succeed in life. This further could be interpreted as key values that are valuable when undertaking new projects, particularly for women who face limitations and economic constraints within the households and community.

In addition to the income they obtained through selling food and vegetables, women stated that being an integral part of the 'Tianguis' has allowed them to develop new skills in the way they communicate their culinary knowledge with consumers and other farmers. For instance, it was mentioned in a conversation that during their involvement with the 'Tianguis' in the early days they found it difficult to converse and express their ideas in public; however, after having recently featured in Radio and TV interviews they are more confident in expressing their opinions within the 'Tianguis' organisation despite the fact that there are male members from other communities who have an upper hand in the decision-making process in the organisation. Thus, the ability of women to make decisions that benefit them, their households and their organisations, and the capacity to become visible and express themselves in public arenas could be interpreted as pathways to agency and women empowerment.

Farmers in the 'Tianguis' have been involved in several training activities, for example between 2010 and 2011 they were involved in 12 workshops named "strengthening of sustainable productive alternatives for community development". These training activities were organized by ECOSUR (a sustainable development research institute) with emphasis on sharing knowledge between farmers and academics, with the aim to diversify food production in the region and reflect on the importance of the environment, agroecology and social organisation and gender. In the following quote the participant reflects on the results of the training activity.

> "The truth is there have been changes, for example, I talked to you about what William Gamboa, rest in peace, told us in a workshop: ladies, instead of gossiping with the neighbour, get planting, plant chile, plant any seeds you can find. Of all the seeds you sow, two or three will grow, not all of them will service…. he was right. So, every time I plant some seeds I tell myself that not all of them will grow. For example, there above we have already diversified. I would love to plant more crops but there are things that work and others that don't. So, the ones that don't work, I don't want to plant them anymore. INT-003-BJ

Since the establishment of the 'Tianguis' the researcher has observed the willingness of the participants to engage in more sustainable food production practices and improve their livelihoods. For example, they make compost with the tamales leaves that have been sold in the 'Tianguis' and they use it for their plants in the homegardens and 'milpa'.

5.2.4 Dialogues between farmers and consumers

During the interviews with the consumers at the 'Tianguis' they were asked whether their interactions with farmers has enabled them to widen their knowledge about local food or new recipes using ingredients bought from the 'Tianguis'.

Despite the fact consumers were from the Soconusco region it was evident from the analysis that contact with the farmers has enabled them to try for the first time leafy greens such as 'pata de paloma', 'quilete dulce', 'quishtan'. Consumers had also tried 'pacaya', 'guinte flower', tree tomatoes, and green 'tortillas' made from fresh maize dough and 'chipilin' leaves. The interesting aspect here is the two-way flow of information; whilst consumers were willing to explore new recipes and food items prepared and sold by the community members, they also were keen to suggest food preparations that they preferred to be prepared and sold at the 'Tianguis'.

The leafy greens mentioned by the consumers such as 'pata de paloma', 'quilete dulce', 'quishtan', 'guinte flowers' 'capote leaves' and tree tomatoes are generally not available in the local markets in Tapachula, but are very well known in the uplands in the coffee region, although 'pacayas' are more common in the local markets in the region. The 'Tianguis' therefore clearly has been a focal point for sharing knowledge on local food to consumers.

Furthermore, in the interactions between consumers and farmers there were exchanges of ideas and influences on foodways in the city. It could be argued that consumers have been strong drivers for the farmers to establish and adapt produce in accordance to the demand from consumers. For example, a female farmer mentioned that when they started the 'Tianguis', in 2007 they would

not sell prepared food, only fresh produce such as ‘chayotes’, beans, squash, limes, bananas, leafy greens from the ‘milpa’, coffee groves and the homegardens in addition to a variety of potted plants. However, they struggled to sell the fresh produce as there were not many consumers. Farmers and the academic committee have been encouraging consumers to try local food through various activities. For instance, they have organized the anniversary celebration and during this celebration they demonstrated food prepared with leafy greens that was offered to the consumers.

In 2009, one of the female farmers started to sell home-made food and ‘tortillas’ from fresh maize dough. This was in response to consumers asking for prepared food to be sold at the ‘Tianguis’. For the farmers it was a good opportunity to get some extra income to cover the transportation and additional income for their households. Subsequently others female farmers also started selling prepared food at the ‘Tianguis’. Gradually ‘green quesadillas’ and food, such as free-range chicken stew, ‘tamales’, battered ‘pacayas’ etc. are widely being sold.

5.2.5 ‘Tianguis’ as a space for social innovation and cooperation.

The ‘Tianguis’ was considered by consumers to be important as an alternative food network organization in the region. Three consumers mentioned that they visited the ‘Tianguis’ because it was a way to build a network that supports consumers and farmers. Other linked their motivations with the alternative ideas about food consumption that the farmers market promotes. The following quotes portray these views:

> “The market offers different alternatives to those portrayed on the television, they are healthier, there is no fatty or fried foods that have caused health problems in Mexico”. Consumer from Tapachula

> “I go to the ‘Tianguis’ because the food is healthy and it is a way of supporting the economy of families that produce food”. Consumer from Tapachula

What is evident in these quotes is that consumers are willing to engage with more ethical food provisioning and they are aware of the social and economic benefits of the ‘Tianguis’ as a social organisation for the small-scale farmers.

What was also evident from the analysis of the interviews was the fact that the ‘Tianguis’ may have to play a more robust role as an organisation in ensuring there is more inclusivity allowing more farmers to be involved with the ‘Tianguis’ in selling their wares and increasing the diversity of products.

During the interviews in Benito Juarez farmers talked about some challenges in the interactions with the consumers when selling food. A female farmer talked about the challenge of preparing food for the consumers in the 'Tianguis', because some consumers may want their food to be prepared and served quickly.

> "Look, there are people that wait, and people that want their food quickly, otherwise they will leave. But it is rare that somebody will leave. We give a piece of paper to the consumers that arrive telling them how many orders there are before them. It is not easy using a griddle on firewood stove; sometimes there is firewood that is good, other times there is firewood that will not burn well, where the fire completely dies. There is firewood that makes a lot of embers and we can make the tortillas quickly as the griddle heats up well. It isn't easy, lots of people say that they will wait because they understand that cooking on a griddle is not easy…but there are people that won't. The other day a consumer invited us (to visit a small private restaurant) to see how (quick) they work". INT-03-BJ

It is evident from the quote above that the farmers had to face difficulties when preparing food in the 'Tianguis' and they have made adaptations in the food preparations and in the organisation of the different activities carried out during a 'Tianguis' day. Additionally, consumers also drive changes in terms of modern facilities and cooking procedures in order to satisfy consumer's preferences. The participant from the quote above also emphasised that the consumer was suggesting changing the firewood stove by gas stove in order to make the 'tortillas' quicker.

Drawing from these results some interesting questions arise from this research, for example, how far should changes be stretched to accommodate the needs of consumers without interfering with their culinary practices? One consumer also noted that there are not enough vegetables such as carrots, potatoes, tomatoes. These vegetables are generally consumed in urban households. In order to increase the diversity of vegetables it was mentioned by the participants that they invited a farmer from a small community also on the Tacana volcano but in Guatemala, to join the 'Tianguis' and sell his organic vegetables such as potatoes, carrots, beetroots, onions, broccoli, and cauliflowers. Thus again, it is clear that farmers have been making adjustments in the organisation, and in the diversity of food produce they sell to the urban consumers. A farmer described that on several occasions they have been asked by the consumers to diversify the food preparations they sell in the market.

> "The people (consumers) want their free range farm eggs cooked on the griddle in a frying pan. But the truth is that we haven't got enough time to do that". INT-003.BJ

With regard to the diversity of food on offer in the 'Tianguis', one consumer suggested some ideas:

> "There is too much 'chayote', they need to replace it or diversify, maybe grilled or baked with cheese or some other preparation". Consumer from Tapachula.

It is evident from the quotes that consumers would like to find more food products that they are more familiar with, and to a certain extent, they are acting as drivers of changes in the farmers market. It was observed in the 'Tianguis' that several female farmers sold fresh 'chayotes' and bananas but at the end of the day, they have to take them back home or exchange them for food with other farmers. These forms of cooperation between farmers are a way to increase solidarity in the social relations in the 'Tianguis'.

In order to identify changes or influences in the culinary practices in the households in Benito Juarez and in the region, the consumers were asked whether they have observed any changes in products or food preparations, they could find in the 'Tianguis'.

The consumers were of the view that the green tortillas (made using 'chipilin leaves') to make quesadillas were an interesting innovation. The quote below describes the consumer's views:

> "The tortillas were yellow and now they are green. Previously, there were not many natural fruits squash, but now the farmers have diversified and sell different types. Consumer from Tapachula".

Consumers have also tried new food such as tostadas (grilled tortillas with vegetables and chicken). Other responses included improvements in the quality of food; for example, the chicken stew has a better flavour.

Consumers were also asked about other types of food they would like to find in the 'Tianguis'. The responses from the consumers included more varieties of vegetables, traditional sweets, and leafy green soups. Suggestions also included other seasonal fruit squashes, herbal teas, hot chocolate to drink at the 'Tianguis', salads, sweet corn, milk for coffee, yogurt, fresh coconuts, and handmade tortillas to take away. Interestingly there was one consumer who expressed desire to consume iguana meat preparations. Iguanas are protected by the environmental law in the region and in addition they are not eaten in the communities in the Tacana volcano.

5.3 Discussion

Consumers at the organic farmers market were interviewed with the primary motive being to understand how their preferences influence the culinary practices in the region and a broader objective of examining the effects of socio economic and market forces on small scale farming systems in Mexico. During the analysis and fieldwork, diverse interactions between actors were evident, leading to the construction of new knowledge and reconnection of past foodways. Foodways is understood here as symbols, manifestations and culinary practices rooted in a territory. Three key aspects are discussed in this section that has wider connotations to culinary practices and alternative food networks in the region.

5.3.1 Reconnection practices and challenges for actors

It was evident from this research, that consumers view the 'Tianguis' as an embodiment of a social space where they can buy, experience local, natural, and organic food. It signifies tastes and nostalgia from the past. Further, there is a sense of trust underlined in the relations between consumers and farmers. Pascucci et al (2016), Garcia, Rappo and Temple (2016) claim of an emergence of a new form of cooperation between farmers and consumers with the farmers markets paying a key role in the process.

The 'Tianguis el Huacalero' being a part of the Mexican Farmers Market Network, (an umbrella movement in Mexico that promotes sustainable production and alternative consumption practices) serves as a good platform for the consumers to reap the benefits of the social space. While for the farmers/producers, there is a sense of pride in their ability to provide local and traditional food products and disseminate knowledge about this food to consumers.

Kneafsey et al. (2008) argue that due to the growth of the industrial food production system there is a disconnection between consumers and producers, in the sense that many consumers know very little about where food comes from, what is it made of, how it is produced and by whom. Further, they emphasize that reconnection practices are not limited to the relationships between consumers and farmers; partners, children, colleagues, soil, animals, plants, certification, institutions, food, ingredients could all play a role in mediating the reconnection processes. In this chapter it is argued that agro industrial food production and the urbanisation of Tapachula, the main city in the region, has led to a disconnection of urban consumers with the local food practices for instance the consumption of wild leafy green vegetables or staple 'tortillas' made with fresh nixtamalized maize. Thus, it emphasizes the importance of the 'Tianguis' as a social space, in

constructing and mediating close relations, face to face interactions between consumers and farmers through food. This also resonates with the re-spatialization and re-socialization processes constructed in the alternative food networks mentioned by Dubois (2018). Also, reconnection is to do with making the links between particular foods and natures that helps to reverse the aspatialities that are an intrinsic part of a globalized food system (Winter, 2013).

Sims (2009) argues that in the connection processes between consumers and producers food is a powerful part of an integrated experience because food and drinks engage all the senses and could have stronger connection with place. In this study, it was clear that local cuisines had the ability to recall strong emotions linked to the region and their childhood, memories. Consumers visit the 'Tianguis' because they have the opportunity to socialise with other consumers, friends, relatives, farmers in a social space constructed between actors. Based on Tregear (2011), it should be noted that the term 'consumer' has been used in the chapter to denote active actors who are immersed in social relations in multiple social contexts and are the recipients of outputs from food systems.

It was evident from the results that the process of socialisation is rooted in trust as is evident in the case of the certification of organic products which consumers do not seem too concerned about; however, what is also evident is the differences in the preferences of food amongst urban consumers and how they would prefer their food choices to be provisioned at the 'Tianguis' as evidenced in the case of urban consumers requesting baked chayote with cheese. What is also evident in this case is the flexibility displayed by the farmers in the community to adapt to the food choice requests from the urban consumers; these adaptations though are rooted in their culinary practices and environments that sustain the practices. Specifically, the adaptations in food preparations depend on the food products they grow in their plots and in the abilities and knowledge of the women.

Some of these adaptations made to meet consumers preferences are only set in the public spaces and when it comes to the community's own culinary practices they are quite rigid in terms of what they consume, however, adjustments are made to ensure their productive activities prosper. For example, the green 'tortillas' made with leafy green vegetables to prepare quesadillas are only cooked for consumers in the 'Tianguis', while in the households they would prepare plain quesadillas. In summary farmers are willing to adapt their food preparations for public arenas and at the same time they withhold the key traditional culinary knowledge and practices that they hold strongly to their identity.

5.3.2 Local, organic and natural food

Although the objective of the chapter was not to define the term local for the consumers, it was interesting to identify that local, organic and natural food served as a clear instrument for the process of reconnection between actors, namely consumers and farmers/producers. Consumers were of the view that one of the main motivations in visiting the 'Tianguis' was the desire to consume local food, from the region. The term 'local' is an ambiguous word in the literature of food (DuPuis and Goodman, 2005; Tregear, 2011; Kneafsey et al., 2008; Feagan, 2007). For Morris and Buller 2003 cited in (Sims, 2010) local can be explained in terms of a bounded region within which products are produced and sold or in terms of speciality foods in terms of value added products for export to others places. For Blake, Mellor and Crane (2010) the term local not only indicates a local supplier, local producer, but also includes understandings of convenience, health and status.

The analysis reveals that consumer's reference to the term local food is based on the geographical origin of the main ingredients, i.e. food produced in the Soconusco region. Though the ingredients in most of the food products sold at the 'Tianguis' are local in terms of geographical origin the consumers also acquire the added benefits of organically (chemical free agricultural and dairy products) produced food as in the case of the 'quesillo' cheese that is manufactured in the central region of Chiapas, by an organic cattle farming cooperative group, or the vegetables from the community in Guatemala.

It was evident that the consumers recognised that the food was local and traditional to the Soconusco region but there was a lack of awareness of exactly where the food originates from. For example if it came from the mountain areas or was produced principally in the milpa, coffee groves and homegardens. Hence, it can be argued that the term local is a broader category that includes geographical proximity, but also social proximity, such as the case of cheese cooperative group does not have any geographical proximity. Social proximity refers to "interpersonal ties based on acquaintance, or mutual recognition between producers and consumers" (Dubois, 2018, p.6).

Consumers' preferences to local, fresh, natural and organic food implies challenges for the farmers in terms of the environmental and political restrictions associated with producing food in their local environments, social organisation and livelihoods that support the development of these productive activities. For instance, it is a big challenge for the farmers to transport the food

and produce and keep it fresh when transporting it from the uplands to the city. Therefore, placing local, fresh, natural and agrochemical free food on a plate demonstrate the social and environmental commitment of the farmers.

A question that arises is whether the farmers, particularly women, receive sufficient rewards and profit from sustainable production of local food to compensate for the investment in labour? It was evident from the conversations during the interviews with the participants that it was hard work for them participating in the different activities in the 'Tianguis'; however, since there is an income associated with the activity they are obliged to continue with it as a source of income. Whilst economic reasons may be the prime drivers, it was evident from the discussions with the farmers that non-monetary gains also play a key role. Their engagement in the Tianguis leads to creation of new networks with other farmers, consumers, and academics which in turn increases their social capital and presents them with numerous opportunities to control their own decision-making processes. In line with the findings of Dubois (2018) the continued participation of farmers in alternative food networks, even when faced with the logistical and accessibility challenges in transporting their products to the city the farmers continue with these activities purely driven by non-monetary gains.

Furthermore, the 'Tianguis' has helped to recreate the tastes of the region 'sabor a rancho', country farm taste, as the consumers stated. Thus Spiller (2012) argues that farmers markets as social spaces could help to construct ways of appreciating local food.

5.3.3 Farmers market as an opportunity for social innovation and agency

It is important to understand that the farmers are not passive actors in the local food systems, and the food preparations that they sell to consumers depend on what they cultivate on their land or their territory, hence they are responding to pressures by falling back on their own resources, sharing knowledge or adapting tastes.

The concept of socio environmental innovation could be applied in the present study in the processes of sharing knowledge and adapting tastes and ingredients. Socio-environmental innovation is considered here as proposed by Bello, Naranjo and Vandame (2012), a process of action research in localized territories in which the goal is not only to come up with a creative answer to the problems that arise when associating rural development and conservation of natural resources, but also to generate learning so that actors can attain a higher degree of autonomy.

Households are experiencing difficult challenges in their territories, such as the coffee price crisis and incidence of pests and diseases such as 'roya' (*H. vastatrix)* and coffee borer beetle (*Hypothenemus hampei)* affecting Mexican coffee production (Eakin,Tucker and Castellanos, 2006; Benitez Kánter, 2017; Huerta and Holguin, 2016) and high marginalization. For farmers in the Tacana Volcano region, selling prepared food and fresh produce in the 'Tianguis' has been a response to such challenges.

Considering the results, it could be argued that the face to face interactions between farmers and urban consumers have also constructed a common dialogue of knowledge through more horizontal social relations. Food has been a mediator between actors, particularly local and natural food. As a result, more consumers have learnt to prepare and consume leafy green vegetables that are grown in the uplands.

Consumers are also talking about more ethical, reflexive consumption practices. Guthman (2003) in another context of organic food production argues that a reflexive consumer "pays attention to how food is made" and this knowledge would shape his or her taste toward healthy food. For example consumers' narratives indicate that the 'Tianguis' is a place where they can consume home-made tortillas using maize as opposed to the industrialised tortilla available in the region, or that "the Tianguis offers different food alternatives to the predominantly industrialized food advertised in various media outlets". Thus, this particular space affords the possibility of new consumption practices and allows the consumers to reflect and talk about their concerns surrounding conventional food production practices and their effects on health.

It has been also argued that the ability of women to take decisions that benefit themselves and their households, or the capacity to become visible and express themselves in public spaces such as the 'Tianguis' are considered in the research as pathways to empowerment of women. In other words, echoing Kabeer (2005) women are acquiring the ability to make choices that provide them with a tangible benefit. On one hand there is the empowerment process facilitated by a space (the 'Tianguis') where the women use their culinary skills as a tool for this process of empowerment. On the other, there is also the adherence to local knowledge and culinary practices which provide an identity for these women. They are willing to adapt the practices yet retain the essence of the traditional practices. However, this has been a long-term process, more than ten years of hard work for producing and preparing food for urban consumers.

Chapter VI. General Discussion and Conclusion

The aim of the thesis was to examine the effects of socioeconomic and market forces on small-scale farmers in Mexico. This aim was approached through focusing on two specific objectives. The first objective was to examine culinary practices (food production, preparation and consumption practices) and knowledge in a small-scale farming system, when households are involved in alternative food networks. The second objective was to explore the food preferences of consumers in the alternative food networks and its impacts on shifts on culinary practices on small scale farming systems in the Soconusco region.

The research developed a conceptual framework in order to study food. The main concepts were culinary practices and culinary knowledge at a household level. It was argued that globalization, neoliberal policy, industrial agriculture, urbanisation have acted as factors of transformation of food production, preparation, distribution and consumption practices in rural and urban areas in Mexico. Those factors have immediate effects on households increasing the vulnerabilities at different levels. Moreover, at local level interactions with local actors, kinship, households structure, significations, agroecosystems and territory would influence the culinary practices in the households.

6.1 Food production and vulnerability

When analysing the food production and consumption practices at a micro level it was evident that the agroecosystems could shape culinary practices and food habits in rural communities. The main findings of the research indicate the great importance of agrobiodiversity (‘milpa’, coffee groves, home gardens) as well as the forest as sources of food for households. This implies that the decrease in local food production due to external factors such as weather conditions or production for external markets, could have a severe impact on the livelihoods of people and may lead to shifts in culinary practices exercised within the community.

As it was argued the dominance of agribusinesses in the Soconusco region has led to productive reconfigurations with a significant increase in the production of palm oil for external markets and a decrease in the area dedicated to more traditional crops (Trejo Sánchez,Valdiviezo Ocampo and Fletes Ocón, 2018). Thus, the decrease in consumption of food products at the micro level, such as the case of the leafy green vegetables, is an immediate result of regional reconfigurations and land use changes, but also as a response of broader market pressures, and food policy. The

immediate implications for the regions have been seen in Tapachula where it is easier to obtain vegetables from other regions or even from other countries rather than local sources, increasing the dependence of communities and urban consumers on external markets. This has a negative impact on local autonomy, both economically and culturally, leading to changes such as a decline in product diversification and consequently to a reduction in resilience, making rural households more susceptible to external economic, social and cultural forces. This can result in a decline of traditional agricultural practices, knowledge, and traditions associated to agriculture, thus affecting food sovereignty at a regional level, and the right of people to consume healthy and culturally appropriate food.

The effects of climate change also create new uncertainties regarding environmental stability increasing the vulnerability of ecosystems (Ortiz et al., 2018) but also of communities that depend on the ecosystems services in the region.

6.2 Factors influencing culinary practices and responses at the micro level

The research also found the importance of the food preparation practices in the conservation of species, for example the leafy green vegetables or 'verduras'. Drawn on the lived experience of people at the research site, the management of diverse species such as leafy green vegetables are considered here as a pillar for the conservation of plants and the environment that support them. The leafy green vegetables, beans, and 'tortillas' made with maize from the 'milpa' are staple food for the households. Vazquez–Garcia (2008) notes that uncultivated plants or 'verduras' contribute to the indigenous diet with variety and rich in nutrients. Consequently, the more the leafy greens are sustainably managed and consumed in the households the more the knowledge is passed on to the next generation and as a result; the agroecosystems and food culture are conserved.

As discussed in section 4.4.1, 'milpa' is the core livelihood strategy for households. The 'milpa' polyculture allows to source natural food for all the members of the households, and food provisioning for the 'Tianguis' in the city of Tapachula.

For many indigenous groups in Mesoamerica, maize has been the centre of farming practices and the maize plant represents the origin of life (Keleman and Hellin, 2009), moreover contemporary indigenous groups respect and honour the crop in rituals that draw from the indigenous and Christian traditions (Castellanos and Bergstresser, 2016). In the community, farmers highlighted

with the ritual of ‘corte de hoja’ where the close relations between food production practices and respect for their land and ‘milpa’ is evident. Farmers, particularly women also displayed the importance of the ‘milpa’ and agroecosystems as sources of wellbeing or non-material benefits. Thus, the presence of ‘milpa’ not only guarantees biological but also cultural reproduction of households (Vazquez-Garcia, 2008).

Moreover, the ‘milpa’ guarantees the conservation of biodiversity that sustains food practices at the regional level and food diversity in a country considered as the origin of biodiversity. Another advantage of managing the leafy greens in the ‘milpa’, coffee groves or homegardens is that households benefit with food during periods of food scarcity, thus contributing to food security (Fernandez,Mendez and Bacon, 2013; Morris,Mendez and Olson, 2013; Bee, 2014).

However, the agroecosystems that sustain the livelihoods in rural communities, such as on the Tacana Volcano are also vulnerable to several forces that can have immediate effects on food production and consumption practices. It was evident that households are vulnerable to wider forces such as climate change, problems associated to the coffee plantations such as the coffee price crisis and incidence of pests and diseases of the coffee groves, strong winds and hailstorms that can affect the ‘milpa’ and earthquakes, all of which can have serious implications on livelihoods.

The importance of small-scale farming that produces food for households, local and regional markets and its dependence on the management of local agroecosystems was clearly evident in this research.

Drawing attention to the broader political structures that influence household’s culinary practices, Perez et. al. (2012) argue that in the Yucatan peninsula, Mexico, the availability of funding from government programs or from remittances are probably the primary factors motivating the consumption of modern industrialized food, even in households that are engaged in production from the ‘milpa’. Social programs not only provide funds for food, but also inform of more urbanised food habits that often implies unhealthier diets and products with high sugar content. Consequently, policies that were expected to reduce poverty in Mexico could be influencing culinary practices and affecting food sovereignty over a wider sphere.

Therefore, the analysis of the culinary practices of the participants in the ‘Tianguis’ provide an illustrative example of the diverse factors influencing food production and consumption practices.

The increased dependence of households on tortilla made with industrial corn flour, such as seen in the Soconusco region, is another indication of the monopoly of the tortilla flour industry that dominates the Mexican corn markets by companies such as Maseca and as a result of neoliberal policy (Pilcher, 2001). However as seen in the 'Tianguis', the consumers are willing to retain the consumption of traditional hand-made 'tortillas' as part of the food culture, or as Lind and Barham (2004) argue that the social life of the tortilla is intimately woven into the Mesoamerican culture of maize.

Further evidence of negative effects on the production and consumption of maize is provided in the case studied by Vazquez et al. (2020) where the maize crop 'zapalote chico', used to make 'totopos'[21] and 'memelas' in two communities of Oaxaca, faces a reduction in cultivation area due to the expansion of fodder crops, resulting in severe consequences for the women and families that depend on the income provided by selling these food products.

Hull (2014), also argues that the expansion of retailing is the driving force behind changing consumption practices in rural areas in the world. In Mexico, Nigh and Gonzalez (2015) argue that there is a rapid expansion of transnational supermarkets chains, such as Walmart, which have acquired important domestic supermarkets. Clearly, these trends are beginning to have an impact on the Soconusco region.

6.3 The role of women in shaping food culture

The key role of women in culinary practices was also explored in the research. It was evident in the research sites that women pass down culinary knowledge such as cooking processes, ingredients and cultural classification of food (cold and warm), from one generation to the other, generally from mother to daughters or daughters-in-law. This has been argued by other scholars, for example Christie (2002) and Matta (2019), that in rural environments, cooking is part of a woman's domain and culinary knowledge follows a transmission pattern from mother to daughters.

It has also been argued in the research that the role of women associated with culinary knowledge contributes to the possibility of continuity of a sustainable and healthy diet based on natural ingredients produced by the local agroecosystem. Cabrera, Martelo and Garcia (2001) argue that

[21] Totopos and memelas are similar to tortillas but cooked in an earth oven

traditionally the role of women in agriculture has been invisible and therefore also their knowledge, nevertheless women in rural areas participate in the cultivation of native varieties of maize and in doing so contribute to the conservation of seeds in vulnerable environments and again they contribute to food sovereignty at the regional level.

In addition to the 'milpa' or agricultural activities in the home garden, one of the main gender roles of women in the rural community, is preparing food in the households, and the cooking space goes beyond the kitchen serving food for consumers in the farmers market. It is argued that the participation of women in public spaces such as the 'Tianguis' has provided them economic freedom and capacity to become visible and share their culinary knowledge, therefore women are considered culinary agents. Moreover, it could be argued that the homegardens and the 'Tianguis' are resources that aid in the process of women's empowerment.

It has been outlined in the research that women adapt recipes according to the availability of ingredients, but also according to the lived experience, knowledge about ingredients and flavours, and household structure. Thus echoing Christie (2002) the kitchen and the extension of the kitchen in the 'Tianguis' could represent a cultural resistance space, where a certain continuity could be observed that reflects history and shows the relationship between society and the environment. It could also represent resistance to the agroindustrial food system and globalisation processes that are pushing to change the consumption practices in the region.

In a wider perspective and taking into account the results of this study, it is important to recognize the important role of women in small scale agriculture, food production and biodiversity conservation; moreover it is important to emphasize as Agarwal argues (2014) that unequal gender relations embedded in households and other social and economic constraints need to be addressed.

6.4 Territory and identity in the construction of food culture: Can local food initiatives enact possibilities for transforming food systems?

Looking at the culinary preferences of consumers and its impacts on small scale farming systems in the Soconusco region the research found that the food dynamics within the studied community were in constant transitions due to the interactions with other social actors such as other farmers, academics, and general consumers; pressures of the markets and agrobiodiversity.

Moreover, the research outlines that through the development of the farmers market, mainly female farmers continue to contribute towards creating new meaning to the region. Through the interaction between farmers, consumers, academics, and other actors that have participated in the consolidation of the 'Tianguis' they have constructed social bonds mediated by a profound sense of trust. As Moragues-Faus and Sonino (2012) argue, trust is essential in the construction of symbolic capital and reinforces a sense of belonging and shared values among agrarian actors. Thus the 'Tianguis' as a social space has recreated the sense of belonging to a diverse region linking the food to the childhood and memories of consumers.

It was also argued in the analysis of consumer food preferences (in section 5.3.1) that the interactions mediated by food have created processes of reconnection between the rural and urban actors. Hence, food considered here with agentic capacity (Abbots, 2017) and culinary knowledge are created and transformed through interactions between the regional actors.

Farmers achieve a sense of pride from the way they produce and prepare their natural food, and this was evident in the photos taken during the research. For instance, women wanted to share with consumers the photos taken in order to share their culinary knowledge and show their territory integrated by 'milpa', coffee groves, home gardens (see photo appendix).

Gliessman, Friedmann and Howard (2019) outline that central to reconnection between these actors is the recognition of the fact that being a farmer is an important occupation, one that carries with it knowledge essential to sustaining ecosystems and cultures, and that farmers should be supported to guide the evolution of the diverse crops they plant, tend and harvest. In this sense, it could be argued that in reconnection processes there is a need for more equal relations between actors. It is crucial to develop dialogues of knowledge between actors in local food systems. As discussed above, communities have been influenced by different forces and that the establishment of alternative food markets opens up the possibility for farmers to transform food systems at a regional level.

With regard to culinary practices, participants appear to make a special effort to ensure that their traditional food are preserved, but at the same time cultivating different types of maize and preparing food to ensure they meet the preferences of outside consumers, and thus contribute to household income. Therefore, it is evident farmers in this research strike a balance between

preserving traditional crops and culinary practices in their own households catering for the demand and food/taste preferences of external consumers.

At a regional level, the leafy green vegetables, food preparations with maize such as ‘tortillas’, ‘quesadillas’, ‘tamales’, natural food, food grown without agrochemicals have been positioned in the city as an important component of the rural livelihood in upper parts of the Soconusco region. Furthermore, another agroecological farmers market has been organized in Cacahoatan, a neighbouring town with farmers from the Tacana Volcano region. Thus, the ‘Tianguis’ as a farmer’s social organization disseminate knowledge about local food, based on sustainable food production practices but also knowledge about organisational processes between farmers within and outside the Soconusco region.

Thus, this type of local food movements enriches the food culture of the region. Lisbona (2014) argues that the Soconusco region is well known for its Chinese food prepared in restaurants or in the households and it has been constructed as part of food local identity derived from the Chinese migrant’s food culture in the region. Similarly, natural food prepared by farmers from the uplands plays an important role in the region, contributing to make visible the diversity of the biocultural region.

In summary the analysis of regional experiences through the perspective of culinary practices and knowledge, as in the present research, reveals the important role of farmers in small-scale farming systems and highlights the diverse endogenous movements that counteract more global forces such as globalization and industrial food production and promote food sovereignty. Furthermore, the research emphasises the significance of farmers own agency in shaping cultural practices and knowledges, thus farmers embodied food practices and knowledge based on ‘milpa’ and maize.

6.5 General Conclusion

It was stated in the research problem that the local agroecosystems that support rural livelihoods in Mexico are more vulnerable and exposed to global processes that tend to drive industrial agriculture and transform food production systems (Appendini and Quijada, 2016; Otero, 2012). As a result, there are diverse local responses led by farmers and organizations trying to counter these global forces. Therefore, it is important to examine the experiences of regional actors and their contribution to the construction of alternative food systems in rural and urban areas through participatory research methods. Below the general conclusion is divided in three sections: conclusions of the first and second objective, and a wrap up of the methods.

The aim of the thesis was to examine the effects of socioeconomic and market forces on small-scale farmers in Mexico. This aim was approached through focusing on two specific objectives in research in the Soconusco region of Chiapas, Mexico.

The first objective was to examine culinary practices (food production, preparation and consumption practices) and knowledge in a small-scale farming system, when households are involved in alternative food networks. The data derived from the fieldwork conducted in Benito Juarez el Plan in the Tacana Volcano Biosphere Reserve.

The main findings highlighted that households have been consuming natural cuisines for at least two generations and there has been a shared sense of pride in adhering to these longstanding food practices. Women were aware of the importance of their natural food and typically cooked leafy green vegetables, beans and home-made tortillas. The degree of importance the research participants placed on “natural” food made with local ingredients reflect cultural adaptation to their agroecosystems such as milpa, homegardens, coffee groves and forests as an additional source of food.

These culinary practices are rooted in their biocultural ‘mam’ identity, rooted in their ethnicity and a reflection of the Mesoamerican diet, thus culinary knowledge is not separated from their practices. The natural foods based on ‘caldos’ ‘recaditos’ and ‘tamales’ are bio-cultural markers of communities’ identities and their territory.

The importance of the milpa as a component of the biocultural landscape was emphasized. It was evident from the narratives of the participants that their land-territory is held in high esteem not only as a provider of food, but also perceived as a provider of well-being. Therefore, in a similar

manner to the elders being revered by the younger generation for the wealth of knowledge and traditions they uphold, land is also respected. These results demonstrate the importance of knowledge on the 'milpa' and "natural food" being passed down to younger generation to ensure food production and food sovereignty of the local communities.

Women are considered in this research as culinary agents. The farmers, predominantly women, have used the 'Tianguis' as a platform to share their knowledge about their food and culinary practices and they have developed, with the support of diverse actors, a source of income in a region with a high index of marginalisation. The role of food, the 'Tianguis' and homegardens as sources of empowerment was highlighted. In addition, kinship ties played a significant role in providing support and allowing the women's involvement in this specific alternative food network. However, it has been argued that women have been performing a higher workload under difficult conditions and constraints in their territory.

The second objective was to explore the food preferences of consumers and its impacts on shifts on culinary practices on small scale farming systems in the Soconusco region. The main findings showed that the 'Tianguis' has provided an important social space to forge an alternative movement of production and consumption practices in the Soconusco region. Farmers and consumers are constructing close relations and face to face interactions mediated by local and natural food.

It has been emphasised that consumers are willing to try local food and in doing so engaging in a more reflexive and ethical food consumption practices in a region predominated by large scale agroindustrial production. The willingness and ability of women to adapt to the food choice requests from urban consumers was underlined; these adaptations though are rooted in their culinary practices and the adaptations in food preparations depend on the food products they grow in their plots and the women's culinary knowledge.

Despite differences in the culinary practices between farmers and urban consumers, it appears that through more horizontal interactions there has been dialogues of knowledge between actors, making organic and natural food more accessible for the local urban population.

Farmers value their habitual cuisine and through the continuation of their culinary practices, they are establishing connections with other actors within the territory. By sharing their knowledge

about natural food and the importance of maize with the consumers in the organic farmers market, the farmers are creating awareness about more sustainable food production practices.

As a result, of this alternative movement and the interactions between actors a large group of consumers are buying organic, natural food and fresh produce to cook local food, thus repositioning countryside culinary practices in an urban area.

The importance of these types of experiences analysed in this thesis contribute to the discussion of the role of farmers markets in promoting food sovereignty and contributes to the understanding of the value of natural food or food produced under agro-ecological practices in rural areas. Natural food depends on the territory and the agroecosystems but is shaped through culture and social interactions.

To such a degree, food serves as an asset of social, biological and economic value. Food has brought a broad scope of benefits and the opportunity to play an important role in the local and regional markets through the organic farmers market as a shortened food network.

Further research should include a more detailed data analysis on the diverse traditional management strategies of the 'milpa' polyculture. It is also important to conduct a deeper analysis of the vulnerabilities and adaptation strategies in the communities that form part of the alternative food networks. Communities are vulnerable to climate change and socio environmental hazards and the impacts on communities directly affect the predominant sources of food and food availability in the region. It is also important to note that there are other organizations from other communities participating in the 'Tianguis', thus it would be useful to have a broader picture of the network and the main actors.

It is important that there is a change in policy, support with funding and investment has been mainly given to the agro-industrial food production sector while there has been an abandonment of support for food production for local and regional markets. Consequently, there is a decrease in food sovereignty at a regional level, leading to major changes at local levels. Therefore, it is fundamental that there are incentives for communities in order to support agroecological food production that are rooted in the culinary identity of the region. It is important to develop an integral biodiversity conservation strategy taking into account regional experiences such as in this research.

The methodology: the provision of voice to the participants through the photo voice method used in this research enabled a better understanding of local processes associated with the different activities and practices involved to produce and prepare food. Furthermore, it allowed an understanding of the consumption and distribution practices in rural communities involved in alternative food networks. The methodology allowed the researcher to construct knowledge with participants in a more creative and participatory framework. Offering cameras to participants also helped to provide the participants freedom to decide the main topics to discuss during the research. It allowed the participants to express their own words, views, perspectives etc, through their own lens and was a tool for more equitable power-sharing between researcher and participants.

As a visual method, photovoice could be an important tool for social anthropology to research more in-depth food topics and help to increase awareness in diverse issues related to food. In order to be successful during the research it was necessary to develop rapport between participants and encourage them to take as many photos as they like. During the interviews it is important to adjust to the participants activities and be prepared with some prompts that help to construct a more in-depth conversation linking the present with past experiences of the participants. The photographs and narratives highlighted by the participants showed their interest in sharing knowledge with other actors of the network in the Soconusco region. Finally, the photo exhibition celebrated during the Tianguis anniversary in November 2017 showcased the photos taken by participants (see photo on page 133).

Appendices

Chapter III

Appendix III.A Participant observation guide

Date: Family Code:

Community

Culinary practices in a typical day.

Source of food:

1. Plants they grow in the home garden
2. Domestic animals in the home garden
3. Members of the family involved in the food production (plots, home garden)
4. Members of the family eating in the same household

Food preparation:

5. Members of the family involved in cooking
6. Role of the different members in the households for activities related to food production, consumption
7. Type of kitchen and cooker
8. Ingredients and main dishes cooked in a day

Appendix III.B Workshop 1

Facilitator or researcher:

Date:

Activities:

Objective:	Picturing food culture in the community! presentation of the project and photo training		
Time	Activity	Description	Materials
	Presentation of the project, objective and the facilitator	All participants will be informed why the project is being conducted, what will involve and the results	Big paper, cards, pens
	Ethics and consent form to be read in Spanish.	The consent form will be read to the participants. The facilitator will ask permission to record in audio and to take some photographs during the workshop	Dictaphone
	Defining the topics with the participants	The facilitator will ask ideas for the topics and will compared them with the ones previously chosen and give some examples or other projects. Topics: Where they obtain the food How they grow or get food What they eat	Paper and cards, photographs
	Training session on taking photographs	The facilitator will explain the basic steps to use a digital camera and taking pictures. The participants will have a few minutes to take some photos.	
	Final instructions for the photographs*	Ask for questions, comments and doubts about the project	
	Sharing some food previously arranged and cooked it in the community		

*Participants should avoid taking photographs of other people's faces without their consent.

When appropriate some photographs should be published only with the consent of the participant.

Appendix III.C Semi structured interview guides

Interview guide when describing the photographs in the households with family members:

Interviewee code: example (Com1-00) Date:

Consent form to be read:

Household's sociodemographic characteristics

1 Person Code	2 Gender	3 Relation with the interviewee	4 Age in years	5 Marital status	6Education level in years	7Main occupation	8Other occupation	9Languages	10Have she /migrated. Yes/no	11Number of Years	12Where

Questions below will provide information to:

Identify the knowledge, values and beliefs associated with food in households or rural communities:

Number of photographs taken: Interviewee position:

Who took the photographs: (write for example: farmer, housewife…)

1. Ask the participant to show the researcher the different photos and invite them to choose two of each category: Where/ how they obtain food, What they usually eat?, Who do they usually eat with?, and any other issues related to their food.

Once they have chosen the photographs:

2. Ask the participant to describe why he/she took these photographs
3. Contextualizing or story telling (telling the stories about what the photographs mean) or VOICE- voicing their individual and collective experience.

Questions to prompt participants during the interview describing the photos

Food production

4. How do you perceive your 'milpa'/coffee fields/home gardens and what is the relevance?

5. Are there any places in the ‘milpa’ or forest, homegarden that are important to you? Why?
6. Ceremony/spiritual: Do you know any rituals, prays associated to the ‘milpa’, homegarden, forest, nature related or food. What rituals? When? Why?

Food consumption

What they usually eat?

7. What defines a meal for you and your family?
8. Do you share food, maize, fruits or vegetables with family or friends? When? Why
9. How have you learnt to cook?
10. Did you learn any recipe from mother or grandmother?
11. What is the importance of passing on recipes from one generation to another?
12. Are there any meals that are important or make you feel that you are in your community or family?

Changes over time:

13. What are the most important memories about food in the community?
14. Ingredients and way of cooking: differences in these categories?
15. What food was eaten when the participants were children? What was the main source of food during that time?
16. Has the source of food or type of food changed since then? Why?
17. Is it important for people to pass on plant seeds or knowledge about cultural activities related to the ‘milpa’ and food production?
18. Methods of cooking now and before
19. Utensils for cooking now and before (when you were a child)

Households interview question guide

Household number Date

Interviewee code

Culinary practices

Food production:

1. What type of production takes place is in the households?
2. Land tenure type:
3. Do you have land? ____
4. Number of hectares: ____
5. How did you get the land?
6. What do you grow in the plots?
7. Do you have a home garden? Yes No
8. Size

9. What do you usually grow in the home garden
10. Who works in the home garden?
11. Who usually works in the plots?
12. What do you usually grow in the plots around the year
13. Who works in the plots
14. What do they usually eat during a week?
15. Do you eat something special on Saturdays or Sundays or when someone comes to visit you?
16. What is eaten during traditional festivities? When

Table to be completed with questions from 6 to 16.

Januar y	Februar y	Marc h	Apri l	Ma y	Jun e	Jul y	Augus t	Sept .	Octobe r	Nov .	Dec .	Activitie s	Food eaten/mont h

Food consumption:

1. Are there any season or months during which food is scarce or difficult to get? How do you cope with the situation?
2. When or during what season is it more difficult to get some food from the plots or home garden
3. What do you eat more: wild plants from the ‘milpa’ or forest? Or vegetables you buy from the shop?
4. What do you usually buy from the shops?
5. Where do you buy your groceries?

6. How they cook the food: do you prefer fried meals, stews, soups?
7. Do you usually cook at home? Or where?
8. The amount of time spent a day preparing food,

Who do they usually eat with?

1. Who do you usually eat with?
2. Do you cook for someone else who does not live in this house?
3. Members of the family eating in the same household
4. What organizations do you belong to?
5. What governments programs you are you associated with related to food production and consumption?

Appendix III.D Workshop 2

Facilitator or researcher: Date Community

Activities:

Objective:	Picturing the food culture in the community!		
Time	**Activity**	**Description**	**Materials**
	Objectives	The facilitator or researcher will remind the participants about the objective of the project and the meeting	Big paper
	Participants will be invited to present their photos to the group. The photos will be previously printed.	They will explain why, where and the meaning of the photos.	Photos, projector,
	Categorizing the photos	When they have presented the photos the group will discuss in which category allocate them.	Big paper, cards, pens
	Topics to be covered during the workshop: Importance of producing your own food? The benefits/values of growing a 'milpa', having a forest, home garden? People perspectives about their food in the home garden or plots and about new generations?	If these topics are not covered during the participants presentation	
	Deciding where to present the photos and why.	The participants will discuss where and when to present the photos	
	The facilitator will read the form of consent in order to get permission for future publication		
	Learning from the experience	Discuss with the participants the outcomes or learning from the project	
	Sharing some food previously arranged and cooked it in the community		

Appendix III.E Consumer Interview

Objective

Interviews regarding the motives for visiting the Tianguis and the consumption profile of the consumers. The information is for a PhD thesis about food culture. I would not ask personal details.

Code Date

1. Place of origin
   a. Tapachula b) Other _____

2. Gender**:** Male ____ Female___

3. How many people are with you: _____

4. School:

a) Primary b) Secondary school c)High school d)University e) Master f) Phd

5. Occupation
6. Age:

18-24

25-35

36-45

46-59

60+

7. How many times have you visited the site?

Once Twice More

8. Could you mention the motivations to come to this place:

9. What are the principal products/food that you have got at this site?

10. What have you liked most about the food and drink?

11. Is there anything that you didn't like with regard to the food/drink?

12. Why

13. What food would you like to find in the restaurants or shops at this site?

14. Have you ever given any suggestions to the farmers about the food?

a) Yes b) No
Which one:

15. Before coming to the Tianguis did you know the leafy green that you can get here?
a) Yes b) No

16. What leafy greens were new for you?

17. Do you perceive any changes in the food you can get here?

18. Which ones

19. Add comments

Appendix III.F. Codes names in Benito Juarez el Plan

Name	Description
Ceremonial practices	Practices in Benito Juarez
Changes in culinary practices	Any changes perceived in production, preparation, etc.
No changes perceived	
Social changes	Changes in the community
Technological changes	Changes perceived in Benito Juarez
Coffee groves	Information about the coffee plantations
Community description	Services, etc.
Community practices	Information related to the activities and practices that people have in the community
Culinary practices	Values about food
Ceremonial and special food	List of ceremonial food
Commensality	Consumption practices in the households
Daily food	Daily food in Benito Juarez
Drinks	List of main drinks
Food classification	Information related to cold and warm foods mentioned in Benito Juarez
Food stuff from outside	Food or main ingredients mentioned in Benito Juarez
Knowledge	Classification of food, etc.
Seasonal food	Food eaten during certain periods in Benito Juarez
Sense of place	Emotions, ideas, knowledge about place and culinary practices

Name	Description
Special diets	Dishes that only certain people eat during certain time
Storage	All information related to food storage
Values and beliefs	values of land, ‘milpa’, homegardens in Benito Juarez
Environmental restrictions in BJ	Problems
Food from the wild area	Everything that comes from the wild forest, mountains.
Homegarden	Everything about home gardens
Household organization	Households in Benito Juarez
Household organization LP	Division of Labour, activities by gender
Hunting and recollection	For food
La ‘milpa’	In Benito Juarez
Methodology	
Migration stories	In Benito Juarez
Photo Captions	The captions given by the farmers
Productive activities in Benito Juarez	
Sociodemographic	In Benito Juarez
Tianguis	General comments
Agreements between members	
Consumers	
Vulnerability	Problems identify by respondents in Benito Juarez

Chapter IV

Appendix IV.A Photos selected by participants in Benito Juarez el Plan

Photos shown in this section were selected by the participants to be presented as photo exhibition.

Photo taken by Melisa. Maiz nixtamalizado. Boiling maize in alkaline water.

Photo by Melisa. La papa blanca. White potatoes.

Photo taken by Elvira. Frijol isiche in soup or caldo.

Photo taken by Rolando. La milpa.

Photo taken by Rolando. Frijol Isiche.

Photo taken by Eulalia’s daughter. We are cleaning black beans.

Photo taken by Rolando. Tree tomatoes

Photo taken by Herlinda’s son. My husband in the milpa

Photo taken by Herlinda’s son. My husband picking blackberries.

Photo taken by Herlinda’s son, nixtamalized maize to make tortillas. Cociendo maiz.

Photo taken by Magaly. Beans soup with chilacayote.

Photo taken by Magali. Griselda picking beans in the plot.

Photo taken by Magali. Calabaza (squash) in the milpa

Photo taken by Magali. Jackfruit tree and its vitamins. La yaca y sus vitaminas.

Photo taken by Martina’s son. I am picking some beans in the plot

Photo taken by the researcher. I am cleaning beans, ‘vara beans’

Photo taken by Martina’s daughter-in law. Martina making sweet corn tamales

Photo taken by Refugia ‘Tortillas en el comal’. Making tortillas.

Photo taken by Refugia Perez. ‘Vara’ beans

Photo taken by Refugia. Café árabe. Arabic coffee

Photo taken by Refugia. Son los huevos de las gallinas. Chicken eggs.

Photo taken by Sofia. ‘Frijol isiche’. Isiche beans.

Photo taken by Sofia. ‘Pata de paloma’. Leafy greens for the soup.

Photo taken by Sofia. Chilacayotes.

Photo taken by Sofia. Corncobs hanging in the kitchen.

Photo taken by Hortencia’s son. Chicken tamalitos

Photo taken by Hortencias son. ‘Guinte’ flower to make with eggs.

Photo taken by Hortencia’s husband. La milpa

Photo exhibition celebrated in November 2017. Participants in the project demonstrating their local food. Photo taken by Rosa Hernandez.

Appendix IV.B. Classification of main dishes and drinks in Benito Juarez El Plan.

Main dish or drinks	Type of food	Daily Food	Traditional festivities and ceremonial	Seasonal	Source of the main ingredients
Yerbamora (leafy green)	Caldos (soup)	X			Milpa Coffee groves
Colisnabo (leafy green)	Caldos	X			Milpa
Bledo (leafy green)	Caldos	X			Milpa Coffee groves
Pata de paloma (leafy green)	Caldos Or steamed	X			Milpa
Quishtan (leafy green)	Caldos Recaditos	X			Homegarden Coffee garden
Gallina (chicken)	Caldo (stew)	X			Homegarden
Repollo (cabbage)	Caldo Salad	X			Milpa
Huevos de rancho (free range eggs)	Caldos (soup)	X			Homegarden
Berro (watercress), river	Caldos (soup)				Milpa
Pasta	Soup	X			Shop
Correlon (leafy green)	Caldos	X			Milpa
Cesil (leafy green)	Caldos, Tamales, Guisado	X			Milpa, coffee groves
Mostaza (leafy green)	Caldo (soup)	X			Milpa
Frijol de vara con chayotes (beans)	Caldos(soup)	X			Milpa
Frijol isiche con chilacayotes (beans)	Caldos (soup)	X			Milpa
Frijol isiche con epazote y papas (beans and potatoes)	Caldos (soup)	X			Milpa
Chilacayote (*cucurbita ficifolia)*	Recaditos	X			Milpa

Chayote (*sechium edule*)	Recadito	X			Milpa homegarden
Frijol isiche (beans)	Recadito	X			Milpa
Pacaya (chamaedorea tepejilote	Recadito	X			Coffee groves
Chapay-Tepejilote	Recadito	X			Coffee groves
Papas (potatoes)	Recadito	X			Milpa
Quishtan con chayote	Recadito	X			Milpa Homegarden
Tamales de frijol tierno (green beans)	Tamales	X			Milpa
Tamales de verduras	Tamales	X			Milpa
Tamales (plain tamales with salt)	Tamales	X			Milpa
Tamales de pollo (chicken)	Tamales	X	X		Milpa Homegarden
Tamales de cesil (leafy green)	Tamales	x			Milpa
Tamales de elote (Sweet corn tamales)	Tamales			X	Milpa
Tamales de frijol con yerbasanta (beans with Piper aurtium leaf)	Tamales	X			Milpa Homegarden
Tamales de masa con pata de paloma (leafy green)	Tamales	X			Milpa Homegarden
Papas guisadas (potatoes with tomatoes sauce)	Guisado	X			Milpa

Sopa de arroz (rice)	Guisado	X			Shop
Flor de guinte con huevo (yucca flowers with eggs)	Guisado	X			homegarden
Calabacita guisadita (squash with tomato sauce)	Guisado	X			Milpa
Quesadillas		X			Milpa, market
Caldo de res (Beef stew)	Caldo	x	X		Market
Mole de pato o de gallina (Duck or chicken mle)	Mole		X		Market and homegarden
Barbacoa de res o de borrego (beef or lamb barbacoa)	Barbacoa		X		Market
7 Different mushrooms: Hongo colorado, cresta de gallo, hongo quemado, rechun, xcabilaj, hongo blanco, hongo olote.	Caldo, grilled or in recaditos			X	Forest, milpa
Nosh: caterpillar	Grilled			X	The caterpillar lives in hols of a tree
Tlacuache (oposum)	In recaditos			X	
Squirrels with pasta noodles				X	Milpa, coffee groves and forest
Gopher	Grilled and in recaditos			X	Milpa and coffee groves
Salsa de tomate de huevo duro (Boiled egg and tomato sauce)	Salsa	X			Milpa
Salsa de tomate de árbol (tree tomatoes in sauce)	Salsa	X			Milpa
Salsa de tomate con guisnay (tomato sauce with *Spathiphyllum phryniifollium Schott*	Salsa	X			Milpa

Salsa de tomate rojo y chile serrano (tomato sauce with serrano chili)	Salsa	X			Milpa
Chayote en dulce	Conserve	X			Milpa, Homegarden
Calabacita picadita con azucar (squash boiled with sugar)	Conserve	X			Milpa
Atole de elote Sweet corn)	Atoles			X	Milpa
Maiz (maize)	Atoles	X			Milpa
Platano (plantain)	Atoles	X			Coffee groves homegarden
Pinole (grilled maize)	Atoles	X			Milpa
Avena (oats)	Atoles	X			Shop
Guineo (bananas)	Atoles	X			Homegarden Coffee grove

Recaditos is a sauce cooked with a mix of maize dough, ground seeds of squash, coriander and achiote (*bixa Orellana*).

Caldos: is a broth, where the main ingredient could be chicken or any "verdure" leafy green, cooked with water, salt and in some cases species are added.

Tamales: is a main dish made with maize dough and steamed folded in a banana leaf or 'canake' leaf (*Quercus candicans*). Tamales are generally stuffed with chicken or any vegetables.

Barbacoa: is a sauce made with different spices, tomatoes and chillies. The sauce is added to beef or lamb and is cooked very slowly.

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