Farmer Cooperatives in Mexico

Case studies in Jalisco

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Abstract

Farmer cooperatives are businesses owned and controlled by (and for) their members in order to create welfare and satisfaction beyond simple profitability. In developing countries, farmer cooperatives have been formed in rural areas in an effort to improve social integration, social equity, market and information transfer. Additionally, cooperatives have reduced the negative economic impact of market power and uncertainty through lower transaction costs, higher incomes and collective bargaining power.

However in Mexico, cooperatives have faced an increasingly competitive and dynamic environment and have not adhered to the principles and values, such as solidarity, self-help and mutual aid, established by cooperative legislation. There is a lack of education, training and culture in relation to cooperatives. In addition, there is limited government support for financing, no stimulation for their creation and development and no public technical assistance. Despite this situation, in the state of Jalisco, there are successful consumer farmer cooperatives, whose main objective is to supply feed input (concentrates) to their members at the lowest possible cost. They have been able to achieve this by leveraging the collective bargaining power of members via the cooperative union.

In order to identify factors for success in relation to the farmer cooperatives in Jalisco, a mixed methodology study was undertaken, using three case studies and a survey. Three farmer cooperatives in Los Altos, Jalisco were selected for the research: Pedro Ezqueda, Nutrimentos and Prolea. The results from the study showed that the following factors influence the success of farmer cooperatives in Jalisco: leadership; member knowledge and continuity; effective communication; member satisfaction; training; and government support.

Additionally, challenges faced by these cooperatives include: poor understanding of cooperative principles among members; low enthusiasm for attending training; individualistic members with limited trust between them; lack of member commitment and participation in their cooperative; lack of young people joining the agriculture industry (including cooperatives); and no clear public policies regulating the agricultural sector. Despite these issues, farmer cooperatives have been successful within the challenging and dynamic environment in Mexico.

Keyword: Jalisco, Mexico, farmer cooperatives, factors for success

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List of abbreviations

COFOCALEC Consejo para el fomento de la calidad de la leche y sus derivados (Council for the promotion of the quality of dairy products)

FAO Food and Agriculture Organisation of the United Nations

GDP Gross Domestic Product

GLCS General Law of Cooperative Societies

ICA International Cooperative Alliance

IFCN International Farm Comparison Network

IMDECOOP Instituto Mexicano de Desarrollo Cooperativo (Mexican Institute of Cooperative Development)

IOF Invested Oriented Firm

MX Mexico

NAFTA North American Free Trade Agreement

NGO Non-Government Organisation

NZ COOP Cooperative Business New Zealand

UCCA Union of Consumer Cooperatives from Los Altos

UN United Nations

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Chapter 1

1. Introduction

1.1 Background

Cooperatives have been developed as social and economic organisations. They give priority to maximise the satisfaction of the needs of their members by offering services that can create a state of well-being for their members with a criteria of success, going beyond simply optimising profitability (Michelsen, 1994). They also provide valuable knowledge and information, encouraging members to innovate and be able to adapt to a changing market (FAO, 2012).

Cooperatives and rural institutions contribute to food security by promoting smallholder access to necessary information, services and tools. This enables them to produce more food, market their products and generate jobs, creating better lives and increasing food security globally. Cooperatives are able to overcome challenges by providing their members with useful services. These services go from information, natural resources, technology, communication, training and facilitating their presence in the decision making process (FAO, 2012).

In Mexico, cooperatives have not been guided by the universal cooperative principles and commitment with the community. There is lack of education, training and culture relating to this matter and no capacity to stimulate the creation and development of new cooperative organisations. There is very little government support for financing cooperatives and, in addition, no public technical assistance such as management, accounting, financial services or marketing (Izquierdo, 2012).

Izquierdo (2012) states that the current problem the cooperative sector is facing in Mexico is mainly due to the economic model that is in place. She reasons that Mexican capitalism under the neo-liberal model excludes the cooperative movement, taking it away from national development plans. Despite this, she identifies successful cooperative societies that have survived within the economic politics that Mexico is living. Therefore, Izquierdo (2012) sees these societies as proof that an alternative economy can be reached, with more justice in an inclusive society.

In Mexico, some farmers have adapted to new challenges by forming cooperatives to serve a variety of functions, ranging from increasing bargaining power to buy feed to accessing projects. Also, farmer cooperatives have been constituted as formal groups to grow the capacity of their members and obtain benefits that help increase productivity, working to manage regional dynamics in a global market economy (Vazquez & Aguilar, 2010). Therefore, these farmer cooperatives have been successful in the face of an increasingly competitive environment.

Mexico is a country where milk production has an important presence in the agricultural sector, being the third largest commodity by total value (FAO, 2015). At the same time, Mexico stands out as a major importer of world dairy products and inputs (Garcia, Martinez, Salas, & Tanyeri-Abur, 2000). Mexico ranks 15th in world milk producers (IFCN, 2014), producing 11.1 billion litres of milk in 2014 (Lactodata, 2015). Despite national milk production increasing, demand has increased at a higher rate, resulting in about 30% of milk consumed being imported (Hernandez, Salcido, & Branson, 2013). It is mainly imported from the United States (76%), New Zealand (9%) and Chile (3%) (Canilec, 2014).

Globalisation in Mexico has encouraged the importation of raw materials and food at low prices, intensifying the competition in domestic markets (Jimenez et al., 2011). The Mexican government keeps prices low for dairy farmers and imports cheap milk to keep prices low for consumers (Brambila, Mora, Rojas, & Perez, 2013). As a consequence of market liberalisation and the signing of the North American Free Trade Agreement, farmers have been vulnerable to cheap imports of powdered milk from the United States and subject to new quality standards (Dobson & Proctor, 2002).

The state of Jalisco has a strong agricultural industry. It is the most important animal feed producer in Mexico, producing 12% of the total and is the second largest producer of maize for grain in the country, producing 15% of Mexico's total production (SIAP, 2015). The high concentration of farmers in the region has generated a need for feed and concentrates. Jalisco is also the biggest producer of milk in Mexico, with 19% of total milk production coming from this state (SAGARPA, 2014). The main dairy region in the state is Los Altos; this region is in the north-east of the city of Guadalajara and provides approximately 12% of total Mexican dairy supply (Wattiaux, Blazek, & Olmos, 2012).

The main feed utilised for cows in this region are maize silage, hay and concentrates. Feed is the most important input and accounts for about 57- 70% of production costs (Olmos, Ramirez, & Heredia, 2015; Villagomez, Aguilar, & Rodriguez, 2014). The grains used for concentrates by these farmers are mainly maize, sorghum, dry distiller grain, canola meal, soybean meal, cotton seed and wheat. These grains are brought from different parts of Mexico as well as other countries such as the United States and Canada, with approximately 30% imported (Olmos et al., 2015).

Cooperatives play an important role in the agriculture of Jalisco. There are more than 20 cooperatives in Jalisco, made up of 4000 member farms. These are primarily consumer cooperatives, whose main objective is to supply feed input (concentrates) to its members at lowest possible cost (Olmos et al., 2015). They are able to achieve this by leveraging the collective bargaining power of members via the cooperative union.

Producers and farmers often form agricultural cooperatives to protect the current and future value of farm assets (Cook & Chaddad, 2004). By organising themselves as cooperatives, farmers can increase the efficiency of agricultural production by working collectively. They can also gain stronger bargaining power in local or regional markets (Hendrikse, 2002).

Value-added products manufactured and marketed by cooperatives may improve rural livelihoods by reducing uncertainty through collective bargaining, lower transaction costs, and higher average net incomes (Nicholson, Gebru, Ehui, Shapiro, & Delgado, 1998). The development of these cooperatives has become an efficient approach to bring farmers into a marketing economy. Therefore, an understanding of key factors that influence the success of farmer cooperatives will certainly help the future development of such organisations.

1.2 Problem Statement

The agricultural business environment in Mexico is complicated and dynamic. There is a lack of organisation in the sector, poor rural infrastructure, socio-cultural diversity and climate variations, all making agriculture a complex industry. These issues and supply chain complexities make it difficult to achieve good levels of organisation in the sector.

In Mexico, there are cooperative societies organised as formal groups improving the capacity of their members, obtaining benefits that help increase productivity, facing regional dynamics and

the global market economy (Vazquez & Aguilar, 2010). Cervantes (2002) noted that although farmers have benefitted from cooperative membership, cooperatives are viewed by some members only as an instrument, without a full understanding of cooperative principles.

Cooperatives are defined by the General Law of Cooperative Societies (GLCS of 1994) as: "an organisation based on common interests and the principles of solidarity, self-help and mutual aid, in order to meet individual and collective needs, through the economic activities of production, distribution and consumption of goods and services" (DOF, 1994, p. 1). However, Cervantes (2002) reasons that some farmers only participate in cooperatives to obtain collective goods such as feed, milk cooling tanks or access to projects and programmes, without following the cooperative principles of solidarity, self-help and mutual aid mentioned by the Mexican law.

Izquierdo (2012) also states that the Mexican government excludes the cooperative movement and has taken it away from the national development plans. Despite this, in the region of Jalisco, farmer cooperatives have decided to sell concentrate feed to farmers at lower prices and increase farmers' collective bargaining power and through these actions are showing potential for growth and development for farmers in the region (Wattiaux et al., 2012).

In order to develop farmer cooperatives successfully in Jalisco, it is important to identify key factors for cooperative success. However, no research so far has looked at this. Therefore, this research aims to contribute to the identification of key factors that influence the success of farmer cooperatives in Jalisco. This thesis considers a successful farmer cooperative to be one that prioritises the maximising of the satisfaction of the needs of members by providing services that can create a state of well-being, going beyond only optimising profitability (Michelsen, 1994). The prime indicators of success of farmer cooperatives are: membership growth and longevity; income growth; positive community impact; and member satisfaction.

1.3 Overall Aim and Objectives of the Research

The overall aim of this research is:

- To identify key factors that influence the success of farmer cooperatives in Jalisco, Mexico.

The objectives include:

- Overview the situation of the agricultural industry in Mexico and Jalisco.
- Describe and analyse farmer cooperatives in Mexico and Jalisco.
- Describe key success factors of farmer cooperatives in Jalisco.
- Analyse key factors that influence the success of farmer cooperatives in Jalisco.

1.4 Structure of the Thesis

Chapter one presents the background and objectives of the thesis, chapter two overviews the situation of the agricultural industry and cooperatives in Mexico and Jalisco, in particular. Chapter three presents the literature review on cooperative theory including the background, principles, agricultural cooperatives and key factors for cooperative success.

The methodology is presented in chapter 4, including the design, site selection, sample procedures, data collection and analysis. Chapter 5 is a description of the cooperatives studied followed by chapter 6 which includes the quantitative results from the survey. Chapter 7 discusses the qualitative and quantitative results and chapter 8 presents the conclusion.

Chapter 2

2. Agriculture and Cooperatives in Mexico

This chapter overviews the situation of the agricultural industry and cooperatives in Mexico and Jalisco.

2.1 Main Features

Mexico is a federal republic located in North America; it is surrounded in the north by the United States, in the south and west by the Pacific Ocean and in the southeast by Guatemala, Belize and the Caribbean Sea. Mexico is the fifth largest country in America. It has an estimated population of over 118 million, making it the eleventh most populated country in the world while also being the most populated Spanish speaking country globally. Mexico is a federation with 31 states and a federal district, which is both the capital and largest city (INEGI, 2015).

Mexico has the fifteenth largest nominal GDP in the world. Its economy is strongly linked to the North American Free Trade Agreement (NAFTA) partners, especially the United States (WorldBank, 2014). Mexico's economy has been characterised by strong exposure to international market conditions and strong linkages to the United States economy. Recent economic data show that a recovery, led by strong manufacturing exports and public spending, is underway (INEGI, 2015; WorldBank, 2015). It is expected that by 2050 Mexico will become the world's fifth largest economy (TheCatalist, 2014).

2.2 Agriculture in Mexico

Agriculture is an important sector for Mexico, despite its low contribution to GDP and shrinking agricultural labour force. In 2014, services accounted for 61% of the country's GDP, with industry accounting for 35% and agriculture accounting for the remaining 3.5% (WorldBank, 2015).

Table 1 GDP and Inflation in Mexico. Source: (INEGI, 2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014
GDP growth rate %	5	3.1	1.4	-4.7	5.1	4	4	1.3	2.1
Inflation	4	3.7	6.5	3.5	4.4	3.8	3.5	3.9	4
GDP % agriculture	3.4	3.3	3.3	3.5	3.5	3.4	3.4	3.5	3.5

Poverty in rural areas in Mexico is high and has been increasing. In 2008, 61% of the rural population (with an average annual income of 3,800 pesos) was classified as poor, as compared to a national rate of 45% (UN, 2013).

Table 2 Population and labour force size in Mexico. Source: (FAO, 2015)

Evolution of population and labour force size							
	Size [Millions]				Annual growth rate [%]		
	1999	2004	2009	2014	1999-2004	2004-2009	2009-2014
Total population	102.32	109.38	116.42	123.80	1.34	1.26	1.24
Total labour force	40.66	45.26	49.50	54.09	2.17	1.81	1.79
Labour force in agriculture	8.90	8.62	8.19	7.72	-0.64	-1.02	-1.18
Agricultural population	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

There has been a large and unequal distribution of wealth in addition to the social and economic problems of the country. The population living in the north of the country has a higher standard of living compared to the rural regions of the south. Moreover, the creation of employment has decreased in the southern region where agricultural activities are still predominant (MarketLine, 2014).

Small farms represent approximately 73% of total production units. These small and medium farmers employ the majority of the rural population, providing a decent livelihood for them and constitute a viable base for expanding economic activity in rural areas. Agriculture remains the livelihood for an estimated eight million rural farmers (about 7% of total population), who produce much of Mexico's agricultural products on farms with less than five hectares (UN, 2013). Mexico produces a diverse agricultural commodity mix (FAO, 2015).

Table 3 Commodities by production value and import value. Source: (FAO, 2015)

Top Ten commodities Production value 2012		
	Commodity	Value [1000 Int$]
1	Meat indigenous, cattle	5957723
2	Meat indigenous, chicken	3973383
3	Milk, whole fresh cow	3395495
4	Eggs, hen, in shell	1922740
5	Meat indigenous, pig	1903899
6	Sugar cane	1672930
7	Maize	1365318
8	Tomatoes	1268923
9	Chillies and peppers, green	1120280
10	Mangoes, mangosteens, guavas	1054886

Top Ten commodities Import value 2011		
	Commodity	Value [1000 USD]
1	Maize	2989322
2	Soybeans	1762084
3	Wheat	1321835
4	Rapeseed	973450
5	Food Prep Nes	918801
6	Meat-CattleBoneless(Beef&Veal)	911421
7	Cotton lint	834619
8	Sorghum	687792
9	Milk Skimmed Dry	680243
10	Pig meat	651175

Mexico is among the world's leading agricultural producers. It is ranked first in avocado, lemon and lime growing; third in grapefruit; fifth for beans, coconut oil, oranges and poultry; and sixth for sugar and maize (UN, 2013). In terms of value, Mexico's top commodities produced are: beef, poultry, dairy, eggs and pork; and its top imported commodities are grains including maize, soybean, wheat and canola (FAO, 2015).

2.2.1 Feed and grain industry

2.2.1.1 Feed industry in Mexico

In 2014, global feed production was 980 million metric tons, representing an increase of 1.8% compared to 2013. Mexico and the United States recorded growth while Brazil and China had a

slight decrease in production. These four countries are the largest feed producing countries around the world (Ruiz, 2015).

The consumption of dairy and meat products in Mexico has increased, with a growing population of more than 118 million people (IFIF, 2015). This has made Mexico the fourth largest producer of feed products in the world, producing 30.5 million tonnes in 2014 (SAGARPA, 2015).

Livestock production in Mexico has generated an important feed industry. The poultry industry is the most important user of animal feed products both in Mexico and around the world. Poultry has been the fastest growing sector of Mexico's animal industry and it is the most widely consumed meat in the country (USDA, 2015; Ziggers, 2003). Feed production by species in Mexico is: 50% for poultry; 15.9% pork; 15.7% dairy cattle; 11.5% beef cattle; and 3% pets and aquaculture (SAGARPA, 2015).

The animal feed sector in Mexico has 420 factories supporting more than 40,000 employees directly and 200,000 indirectly. These factories are distributed across the country, although Jalisco is the most important with 12% of the total animal feed production (ANFACA, 2014). Typically animal feed in Mexico is based on maize, sorghum and soybean formulation; this combination varies according to price and availability. The high prices on maize has made sorghum an important energy source in feed, making sorghum and maize the most common grains for feed (SAGARPA, 2015).

Most of the commodity feed ingredients utilised are imported from the United States. These imports got more importance from 1994 with the initiation of the NAFTA, when Mexico opened its borders to cheaper, subsidised grains from the United States (Wise & Rakocy, 2010)

During the years between 1994 and 2008, imported maize over a certain quota should have attracted tariffs; however, the Mexican government never charged those tariffs, allowing the livestock industry to access cheap grain and, therefore, maintain less expensive prices for the final products such as eggs, meat and dairy (Echanove, 2013).

As a result of these policies, imports of yellow maize grew from 3.1 to 10.9 million tonnes between 1994 and 2007, 70% of which was used for animal feed production. Sorghum imports, although in a smaller quantity than maize, also increased between 1994 and 2001. Also, between

1997 and 2005, maize entered Mexico at prices 19% lower than the cost of production whereas sorghum had a dumping margin of 12% (Wise & Rakocy, 2010).

During the last years, sorghum imports decreased considerably since the animal feed industry, which consumes the majority of the sorghum supply, modified its demand for both maize and sorghum. In the year 2000, the industry relied on 70% sorghum and 30% yellow maize; however, by the year 2014, it changed to 44% and 56%, respectively (Echanove, 2013; SAGARPA, 2015).

In Mexico, there are two types of livestock feed companies: integrated companies, which produce feed that is required for their own production; and commercial companies, which produce feed for third-party buyers (Echanove, 2013). In 2013, integrated firms supplied 64% of domestic feed production whereas commercial producers supplied 36% (USDA, 2015).

The primary integrated producer is Bachoco (poultry), followed by LALA (primary producer of milk and dairy), Tyson (poultry), Pilgrim's Pride (poultry), Grupo San Antonio (live chickens), Granjas Carroll (pork) and ALPURA (dairy). The main commercial firms include the US based transnational Agribrands Purina of Mexico (a subsidiary of Cargill) as the primary consumer, followed by Malta Cleyton, Campi, Productores Agricolas Tepexpan, and La Hacienda (Echanove, 2013).

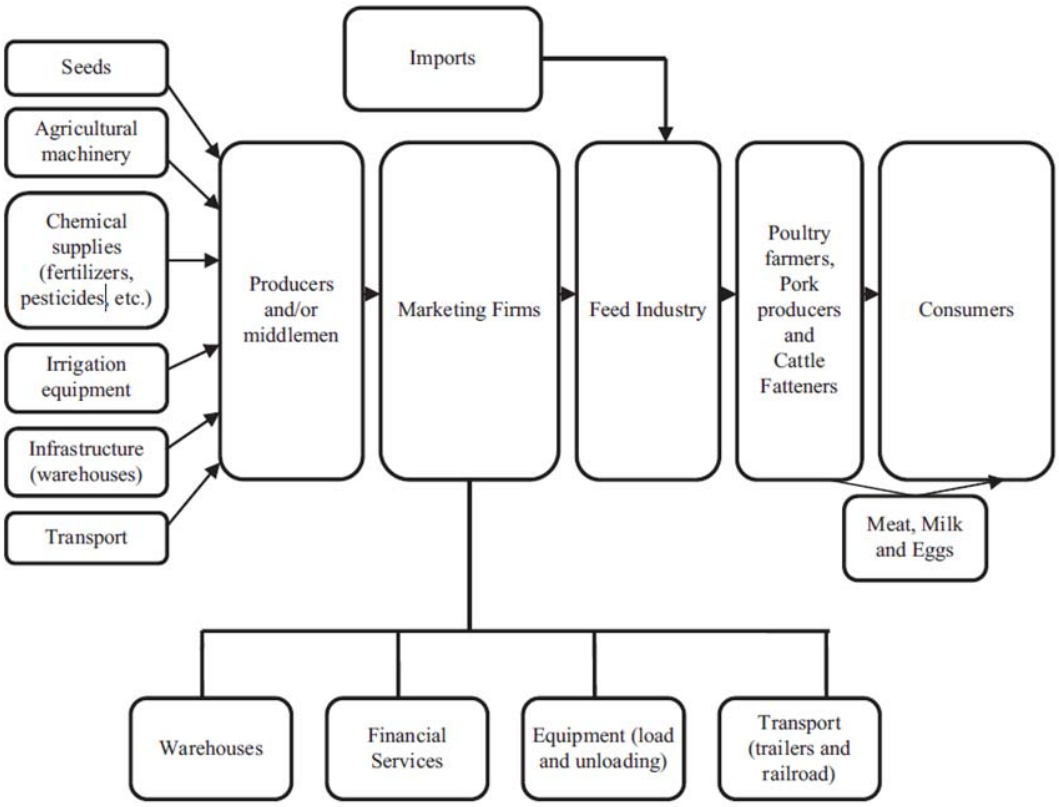

Figure 1 Commodity chain for grains-meat and dairy products. Source: (Echanove, 2013)

Main grains

Mexico produced 37.5 million tonnes of grain in 2014 (SAGARPA, 2015). Maize represented 65%, sorghum 20%, wheat 9% and the rest includes beans, barley, rice and oats (INEGI, 2014). In relation to oilseeds, Mexico produced 425 thousand tonnes. The main oilseed is soybean representing 56%, 33% is safflower and the rest is sesame (INEGI, 2014).

Table 4 Mexican balance production-consumption of main grains 2014 (Thousand tonnes). Source: (SIAP, 2015)

Type of grain	Production	Imports	% Imports	Total	Exports	Human consumption	Animal consumption	% Animal consumption	Starch industry	Seeds	Total consumption
Yellow maize	3,043	10,122	76.9%	13,165	9	607	10,170	77%	2,496	10	13,283
White maize	22,257	844	3.7%	23,101	733	16,955	4,156	20%	0	185	21,296
Total maize	25,300	10,966	30.2%	36,266	742	17562	14326	41%	2496	195	34,579
Sorghum	8,415	136	1.6%	8,551	0	0	8,403	100%	0	35	8,438
Wheat	3,669	4,535	55.3%	8,204	1,197	6,496	352	5%	0	101	6,949

Maize is the most important agricultural commodity, both in terms of production and consumption, as it is the main source of energy for people and animals (Caballero, 2009). Mexico is the world's second largest importer, the sixth largest producer and the sixth largest consumer of maize (USDA, 2015).

In 2014, 25,300 thousand tonnes were produced and 10,966 thousand tonnes were imported. Imports represent 30% of total consumption, having 50% consumed by humans, 41% by animals and the rest goes to the starch industry and seeds (SIAP, 2015).

The Mexican maize market is considered a food grain rather than a feed grain. Because of this difference, Mexico has developed two different markets: one for white maize, which is mainly for human consumption (some goes to feed, especially at smallholder farms) and one for yellow maize, which is mainly for feed, although some goes to the starch industry (Donley, 2014).

Most of the yellow maize is imported (76%) and is mostly consumed by animals (77%). White maize is mostly consumed by humans (80%) producing 95% in the country (SIAP, 2015). The main state in Mexico producing maize are: Sinaloa (16%), Jalisco (15%), Michoacan (8%), Mexico (7.9%) and Guanajuato (6%) (SIAP, 2015).

As Mexico becomes a more active importer, rather than relying only on the United States, it is looking to diversify import markets for yellow maize imports, for example from Brazil and white maize imports from South Africa (Donley, 2014).

Sorghum is the second largest grain consumed in Mexico (20%) and is used for animal feeding. In 2014, Mexico imported less than 2% of its consumption and the main state producers are: Tamaulipas (40%), Guanajuato (18%) and Sinaloa (14%) (SIAP, 2015).

Wheat is also an important grain in Mexico, representing 9% of the grains consumed. It is used for both human (92%) and animal consumption (5%). The main state producers of wheat are: Sonora (50%); Baja California (14%); Guanajuato (7%); and Sinaloa (7%) (SIAP, 2015), although Mexico imports 55% of its wheat for consumption.

Soybean contributes significantly to human and animal nutrition. It is produced mainly to transform into protein meal to elaborate animal feeds. The oil is used for human consumption, industry (butter and confectionary) and biodiesel. Mexico is the fourth largest importer of soybeans in the world, after China, the EU and Japan. In 2014, 240 thousand tonnes were produced and 3,852 were consumed. Only 6% is produced in the country and 98% of total consumption is used for animal feed (INEGI, 2014).

Marketers

The main marketing groups for grains and oilseeds in Mexico are Cargill and Gruma. Cargill started in Mexico in 1972 and it markets, imports and exports agricultural products such as sorghum, maize (white and yellow), wheat, soybean, rice, wheat bran and other by-products. Cargill has plants in Veracruz, Michoacan, San Juan de los Lagos, Jalisco and Tamaulipas.

Gruma is a world leader in producing and marketing maize-meal with operations in Mexico, the US, Central America, Venezuela, Paraguay, Europe, Oceania and Asia (Caballero, 2009).

2.2.2 Milk industry

Mexico ranks 15th in milk producers in the world (IFCN, 2014). In the year 2014, it produced 11.1 billion litres (Lactodata, 2015). Even though the national milk production has increased, demand has increased at a higher rate, resulting in about 30% of milk consumed being imported (Hernandez, Salcido, et al., 2013). Since the decade of the nineties, demand has grown consistently; however, the capacity of local production has been more than 20% behind this demand, hence, imports of dairy products have kept increasing (Wattiaux et al., 2012).

Table 5 Total milk production by period (Thousands of litres). Source: (Lactodata, 2015)

Period	Milk production	Growth
1961 - 1963	2,282,530	
1970 - 1972	4,349,683	90.6%
1980 - 1982	6,840,522	57.3%
1990 - 1992	6,608,290	-3.4%
2000 - 2002	9,408,672	42.4%
2005 - 2006	9,978,427	6.1%
2007	10,345,982	3.7%
2008	10,589,481	2.4%
2009	10,549,043	-0.4%
2010	10,676,695	1.2%
2011	10,724,290	0.4%
2012	10,946,015	2.1%
2013	10,926,772	-0.2%
2014	11,141,124	2.0%

In 2013, Mexico imported 29% of its total consumption of milk (4.4 billion litres) and this import percentage remained consistent in 2014 (Canilec, 2014). These imports are mainly from the United States 76%, New Zealand 9% and Chile 3% (Canilec, 2014).

There are several factors that explain the competitive disadvantages of the Mexican dairy industry: lack of subsidies; persistent structural dualism (modern-exporter vs traditional-family oriented); specialised commerce depending especially on the United States; and the contraction of foreign agricultural investments (Mella & Mercado, 2006).

Currently, internationalisation of the dairy sector, driven by multinational organisations, has been guided by economic regionalisation. The dairy sector imports a considerable amount of goods and services, from input products like animals, food, semen, embryos, medicine, technology for processing and packaging dairy products. The sector also consumes to direct consumer industrial products, like whole milk and skimmed milk, cheeses, yogurt, ice creams, and also consulting and patents. Therefore, Mexico is well-established as a main importer of dairy inputs and products, and consumer of technology created from models from developed countries like the United States (Jimenez et al., 2011).

During the first quarter of 2015, there was an oversupply of milk in the Mexican market. This mainly happened because of a drop in the international prices which generated an increase on imports. Imports from November 2014 to January 2015 were 20% higher than the previous year.

In terms of consumption, it is estimated that in 2015, it will grow 1.3% in relation to 2014, retaining its positive trend. The Global Dairy Trade prices in New Zealand dropped by 56% mainly because of global oversupply. Considering these favourable international prices of milk, imports of powdered milk will grow significantly in Mexico directly affecting the internal market (Rios, 2015).

Table 6 Milk imports by Mexico by country. Source: (Canilec, 2014)

Country	2013	2012	2011
United States	76.13%	72.83%	69.72%
New Zealand	9.80%	9.54%	12.05%
Chile	3.38%	3.36%	3.31%
Netherlands	1.96%	1.95%	1.50%
Ireland	1.46%	1.38%	2.47%
Uruguay	1.14%	1.69%	2.97%
France	1.11%	0.89%	0.65%
Argentina	0.95%	1.35%	1.91%
Germany	0.72%	1.09%	1.24%
Canada	0.67%	0.64%	-
Australia	0.51%	0.55%	0.50%
Singapur	0.17%	1.03%	0.82%
Denmark	0.17%	0.22%	0.25%
Others	1.83%	3.48%	2.61%

Since the mid-nineties, cow numbers have increased in Mexico, reaching 2.4 million in 2013; however, milk production per cow has stayed fairly consistent at 4.6 tonnes per cow per year (IFCN, 2014).

Table 7 Cow population and productivity. Source: (IFCN, 2014)

Cow population and productivity	2004	2006	2008	2010	2011	2012	2013
Cows (1000s)	2,234,246	2,221,686	2,340,903	2,374,623	2,382,443	2,398,639	2,410,289
Milk yield t/cow/year	4.56	4.69	4.63	4.77	4.67	4.69	4.66

Milk production in Mexico can be classified within three main systems:

- **Intensive systems** are comparable with those in the United States, being quality conscious and having good infrastructure including cold chain supply to large processors (Wijnands, Armenta, & Poelarends, 2010). The intensive systems represent approximately 17% of the national herd but they supply more than 50% of the production in the country (Jimenez et al., 2011). The intensive operations are mainly located in the north of the country with big high

tech farms carrying more than 1,000 cows, with an average production of 9,000 kgs per lactation. Nearly all milk is sold through the formal marketing chain (Wijnands et al., 2010).

- **Dual purpose farms** are common in the tropical regions; many of these farms lack access or do not use the cold chain. They supply their milk to artisan cheese makers with the milk quality not perceived as reliable. It is sold mostly on the informal market (Wijnands et al., 2010). The dual-purpose systems represent about 62% of the national herd but only about 18% of national production (Jimenez et al., 2011). These farmers have crossbreeds suited to the tropics and the average milk production is 700 – 1,000 kgs per year (Wijnands et al., 2010).
- The **semi-specialised or smallholder system** does not have the genetic quality of the specialised systems. Cows are fed on grass and crops grown by the producer; it is characterised by low margins and the milk production per cow on average is 4,000 – 4,500 kgs per year (Wijnands et al., 2010). They represent about 21% of the national herd and about 31% of national production (Jimenez et al., 2011). These smallholder (small scale) dairy enterprises represent an important source of employment and are enhancers of Mexican rural families' livelihoods (Val-Arreola, Kebreab, & France, 2006). They have several advantages that contrast with intensive systems such as: low production costs, highly integrated with crop production systems and they absorb most of the family labour and require low investment in facilities (Val-Arreola et al., 2006).

2.2.2.1 Processors

The Mexican dairy processing sector consists of a few large companies (including some foreign companies), and a number of smaller, generally regional companies (Wijnands et al., 2010). Leading Mexican companies, such as Lala, Sigma, Alpura, Lechera Guadalajara and Chilchota, dominate the industry, and together account for more than 70% of the overall dairy food market (Reportlinker, 2013). The foreign processor-marketers that operate in Mexico include Nestle, Danone of France and US-based Kraft Foods. At the same time, the government maintains the extensive feeding programme of Liconsa, which distributes dairy products made from imported milk powder and domestic milk to low income consumers at subsidised prices. Competition among exporters is keen for supplying milk powder to Liconsa and other Mexican processors that use large quantities of imported milk powder (Dobson & Jesse, 2009). The Mexican

government keeps prices low for dairy farmers and imports cheap milk to keep prices low for consumers (Brambila et al., 2013).

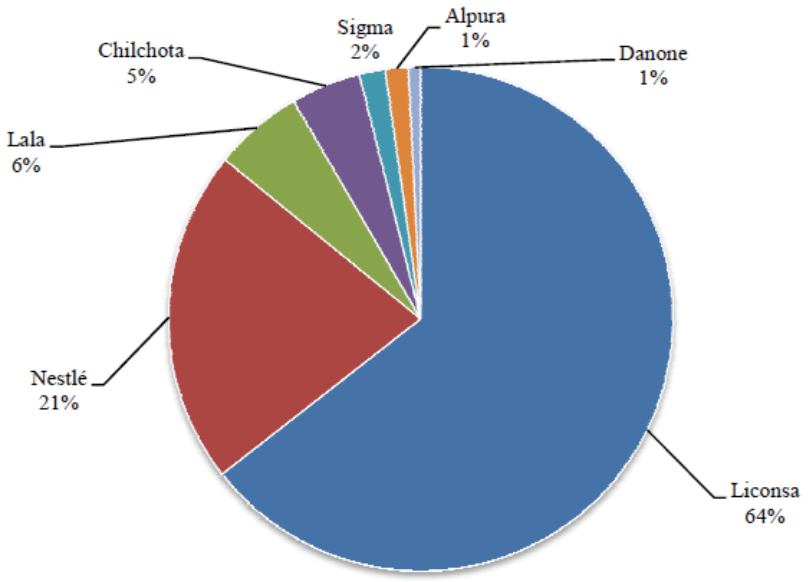

Figure 2 Milk imports by processor 2006. Source: (Caballero, 2010)

The large retailers mainly present in urban areas, such as Comercial Mexicana, Wal Mart, Soriana and others, have 48% of the sales of milk products, while 34% are made in small local stores and markets and the rest sold within small businesses (Jimenez et al., 2011). Therefore, there is an evident diversity of marketing channels but with a clear majority of trade going to the modern channels of large retailers, despite the important presence of traditional small local marketing.

Table 8 Milk processors in Mexico. Source: (IFCN, 2014)

Milk processors list 2012 Milk intake in 1000 tons	
Lala	4314
Alpura	1176
Zaragoza	392
Lechera Guadalajara	392
Nestle	235
San Marcos	235
Santa Clara	113
Others	1020

Firms from the United States receive preferential tariff treatment for exports of dairy products to Mexico. However, New Zealand's Fonterra cooperative also qualifies for preferred tariff

treatment for exports of Chilean dairy products to Mexico from the cooperative's subsidiary, Soprole of Chile (Dobson & Jesse, 2009).

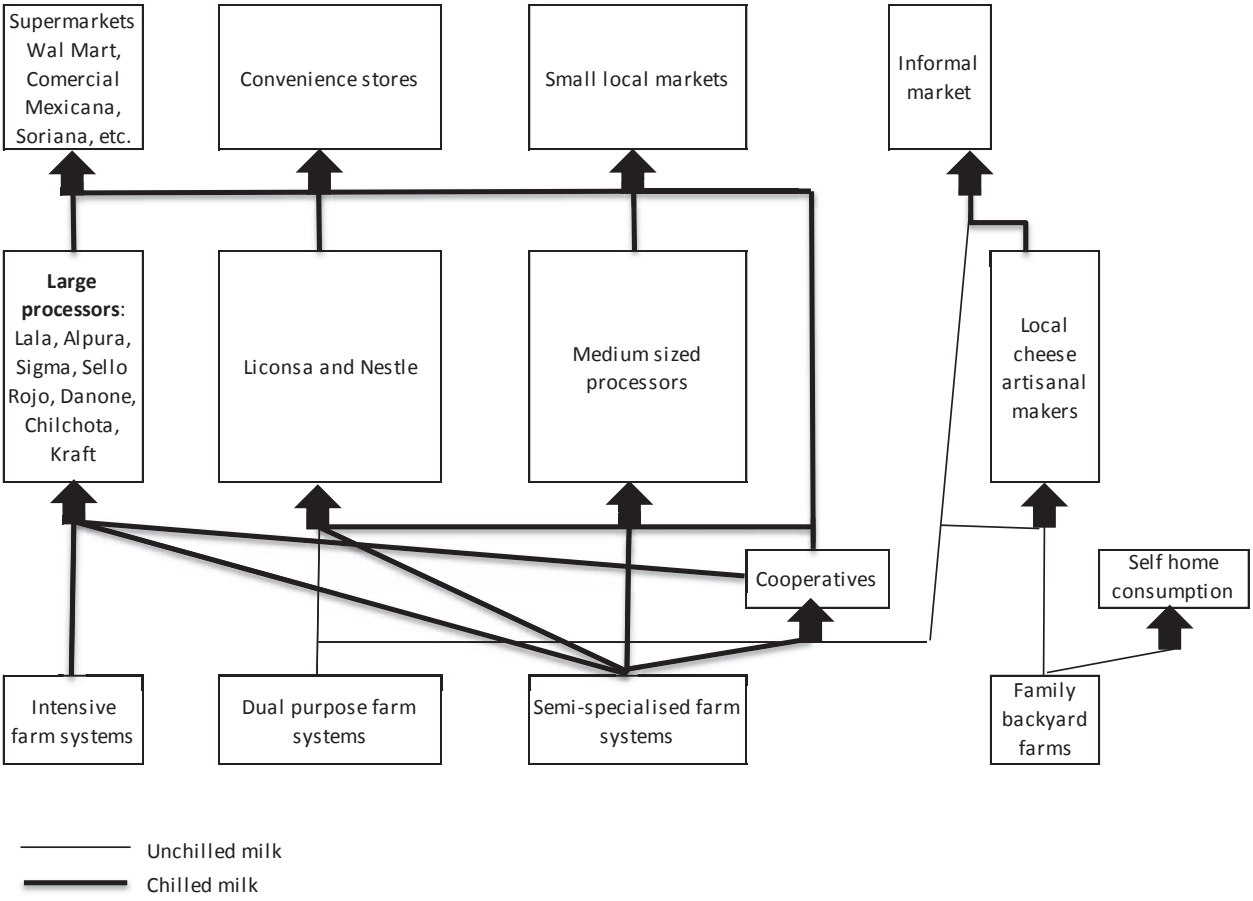

Figure 3 Mexican Dairy Supply Chain

Lala. Lala is the largest Mexican dairy processor, founded in 1950 in Torreon in the state of Coahuila. It has factories located in Acapulco, Veracruz, Mazatlan, Irapuato, Mexico City, Guadalajara, Monterrey, Torreon and Tijuana (Dobson & Jesse, 2009). Lala is engaged in the production and marketing of milk and other dairy products such as cheese, cream, yogurt, desserts and butter. It also manufactures desserts and juices. The group operates 43 manufacturing plants in Mexico, Guatemala and the United States. It is headquartered in Gomez Palacio, Coahuila and employs around 31,000 people (MarketLine, 2014).

Lala has made noteworthy acquisitions in recent years. The firm acquired Parmalat's Mexican milk processing assets after the financial collapse of the Italian firm in 2004. In May 2009, Lala acquired Dallas-based National Dairy from Dairy Farmers of America. The two acquisitions were motivated by the desire of Lala to obtain valuable brands. In September 2009, Lala announced that it had acquired Farmland Dairies of New Jersey. Farmland Dairies distributes fluid milk products in the north-eastern United States, mainly in New York and New Jersey (Dobson & Jesse, 2009). National Dairy, from Dairy Farmers of America, operates 79 stand-alone distribution centres and 17 manufacturing facilities producing a diverse range of dairy products. Promised Land, which has a plant in San Antonio, Texas distributes its products in 26 states in the United States (MarketLine, 2014).

Lala has approximately 460 partners distributed over 172 dairy farms with an average of 570 cows per farm. The presence of intensive systems in the region of "*Comarca Lagunera*" ensures cow production with an average that exceeds 30 litres per cow per day. Dairy farms associated with Lala range in size from 3% of herds with more than 2000 cows, 20% with 1500 - 2000 cows, 15% with 1000 - 1500 cows, 40% with 500 - 1000 cows and 23% having less than 500 cows (Garcia, Martinez, & Salas, 1999).

The development of Lala has progressed through different stages; it was first a conglomerate company and then a holding company. The organisation includes different links in the milk chain, going from inputs to the production of raw material, then to transformation, processing, marketing and local and foreign distribution of products. Lala has promoted the horizontal integration of producers (Garcia et al., 1999).

Alpura. Alpura was founded in 1970 and is the second largest Mexican dairy processor. Its headquarters are near Mexico City (Dobson & Jesse, 2009). Alpura has seven plants, 20 company-owned distribution centres and 60 independent distributors across the country (Alpura, n.d.). Alpura is supplied by more than 160 dairy farmers located in the states of Tlaxcala, San Luis Potosi, Queretaro, Puebla, Jalisco, Hidalgo, Guanajuato, Mexico, Durango, Chihuahua and Coahuila (DataMonitor, 2004).

Alpura produces a number of major products, including pasteurized milk, UHT milk, full cream and skim milk powders, cream, a line of probiotic and drinkable yogurts, dessert cups, and small quantities of cheese and butter. The amount and variety of dairy products of Alpura has grown through the years (IndustriaAlimentaria, 2010).

Sigma. Sigma is one of Mexico's largest firms, with divisions focusing on processed foods, petrochemicals, steel, and auto parts. It is based in Monterrey where it manufactures dairy products and other frozen and chilled food products. Sigma's food product lines include processed meats, iced coffee, fruit juices, fluid milk, soy milk, yogurts, chilled desserts, butter, and cheese. Sigma's yogurts and chilled desserts are produced under license using the Yoplait brand (Dobson & Jesse, 2009). In Mexico, Sigma ranks at the top in cheese products dominating the market by satisfying different needs and tastes. Currently, Sigma is second largest yogurt producer in the country (IndustryToday, n.d.).

Sigma has 30 factories including: 13 for dairy products, 13 for processed meats, three for prepared meals and one for beverages. The company distributes its products through approximately 100 distribution centres (Hoovers, n.d.). Sigma and Grupo Chen formed a new company in 2004, which is in charge of marketing and distributing the cheese for both companies. This new company, which is wholly-owned by Sigma, markets about 50 different types of cheeses under a host of brands. In the 2004–2005 period, Sigma purchased the cheese business assets of New Zealand Milk from the New Zealand company, Fonterra (Dobson & Jesse, 2009).

Chilchota. Chilchota is based in Durango and processes about 700,000 litres of fresh milk per day, producing approximately 6000 tons of cheese, yogurts and caramel toffee products per month. Chilchota's operations include a 12,000 cow dairy farm. The firm sells a large number of cheeses under the Chilchota, Sello de Oro, Durangueno, Lagunero and Temazcal brands. Only the Chilchota and Sello de Oro brands are natural cheeses. Cheeses sold under the other brands are analogue cheeses made from vegetable fats and skim milk. These other brands, which are manufactured from low cost ingredients, have enabled Chilchota to increase its share of cheese sales in Mexico, especially through large city markets and food service distribution channels.

Chilchota imports small amounts of Chihuahua cheese from Uruguay and repackages the cheese for sale in Mexico (Dobson & Jesse, 2009).

Lechera Guadalajara. Lechera Guadalajara produces food and dairy products. The company provides milk, cream, jellies, milkshakes, cheese petit, dry, condensed and evaporated dairy products (Bloomberg, 2015). Lechera Guadalajara is famous in the centre of Mexico for its brand Sello Rojo. It is a Mexican company established in 1961. It has factories in Guadalajara, Linares and Mazatlan. Lechera Guadalajara operates in the states of Jalisco, Michoacan, Guerrero, Guanajuato, Mexico, Coahuila, Nuevo Leon, Sinaloa and Yucatan (Caballero, 2010).

Liconsa. The main function of this state-owned firm is to improve the health and nutrition of poor families in the country by providing quality milk or milk powder at subsidised prices. The main recipients of Liconsa milk are low-income, nutritionally-vulnerable populations, including children under the age of 12, young women between the ages of 13 and 15, pregnant or breast-feeding women, women between the ages of 49 and 55, the disabled or ill and adults of more than 60 years of age (Dobson & Jesse, 2009).

Liconsa has 10 industrial plants: three in the state of Mexico and one each in Colima, Michoacan, Tlaxcala, Veracruz, Oaxaca, Jalisco and Queretaro. Liconsa supports the nutrition of more than 5.8 million people in Mexico (Caballero, 2010).

Liconsa has two major programmes: providing milk to the poor and purchasing local milk. The organisation distributes fluid milk in regions where a suitable cold chain exists. In rural or other areas where no suitable cold chain is available, Liconsa distributes powdered milk in sachets to low income people (Dobson & Jesse, 2009).

Liconsa is the biggest importer of skim milk powder and often holds a large percentage of Mexico's milk powder stocks. The firm usually uses about 60% of Mexico's imported and domestically-produced milk powder and processes an average of about one million litres of milk per day (Caballero, 2010). Mexico's government prescribes prices that Liconsa pays domestic producers for milk under the country's Federal Income law. The prescribed prices are normally maximums and Liconsa may pay less depending on the quality of the milk and distance the producer is located from the collection centre (Dobson & Jesse, 2009).

Nestle. Nestle has operated in Mexico for more than 60 years (Dobson & Jesse, 2009). The company has modified the infrastructure of the region of Jalisco by introducing technology, stimulating the production of milk (Garcia et al., 2000). The foundation of its first plant in Jalisco in 1942 created a moment that generated growth and modernisation of the dairy farmers in Jalisco. This also meant a change from traditional agriculture and dairy production in favour of an industrial approach (Wijnands et al., 2010). This change happened mainly because of the pressure from companies wanting to take advantage of traditional dairy farming that needed minimum investment and assistance to produce the quality and volume required, therefore, directing their efforts on the installation of cooling tanks and technical assistance (Dobson & Jesse, 2009).

Nestle buys 2.3 million litres of milk per day from approximately 4,500 producers, having a relationship strictly to buy milk with informal oral understandings. Nestle pays a basic price with premiums (solids contents) and penalties (antibiotic residues). Price also depends on the cost of production, region, market and competition, with not all farmers receiving the same price (Wijnands et al., 2010).

Variety can be observed in Nestle producers with few big farms, approximately 20 farmers producing more than 20,000 kg per day; 20 farmers delivering 5,000 kg per day; and the rest of the farms delivering 500 kg per day on average (between 10 and 5,000 kg per day) (Wijnands et al., 2010).

Nestle has developed a targeted investment strategy to overcome logistical barriers by building 'dairy districts'. This is where the company invests in milk collection and refrigeration centres for small dairy farm use, with products later shipped to processing plants (Goldberg & Kerry, 2006). Nestle has developed these milk districts, which enhance the quality and quantity of milk available in these regions for the company's processing plants. Nestle also typically provides technical assistance and micro loans to small dairy farmers within its milk districts (Dobson & Jesse, 2009).

Nestle only buys cooled milk, collected by truck, and about 90% of the farmers have milking machines and cooling tanks, with some small farmers share cooling tanks (Vazquez & Aguilar, 2010). As part of Nestle's policy, they prefer to have 1000 farms of 1000 kg per day rather than

100 farms of 10 000 kg per day. This is because they consider it is better for food safety and the environment (Wijnands et al., 2010).

2.2.2.2 Consumption

Small milk producers provide between 30 – 35 % of the Mexican milk without any processing, having low sanitation standards, low quality and being a risk for human health (Jimenez et al., 2011). Milk has not been a traditional consumption item and protein source in Mexico. This is perhaps due to the fact that in Mexico there is a high consumption of milk powder and this has affected the taste preferences of Mexican consumers. This high reliance on milk powder is not only due to the ease of storage and transport but also its links to government subsidies (Tanyeri-Abur & Rosson, 1996). In addition, persistent poverty has required large imports of skim milk powder by Liconsa to supply feeding programs (Dobson & Jesse, 2009). However, consumption of dairy products is growing in Mexico, mainly because of an increase in the purchasing power of several sectors and a higher range of dairy products available for the population (Jimenez et al., 2011).

Consumption per capita of dairy products in Mexico is considerably low compared to other developed countries. Mexico consumes half of what the United States does per capita and about 30% of what people from the Netherlands consume (Alvarez, 2009). The consumption of dairy products in Mexico has shown distinct patterns; where per capita consumption of fluid milk has been much less compared to developed countries like the EU or the US, the consumption of powdered milk per capita has been two to three times higher than in the US or EU (Tanyeri-Abur & Rosson, 1996).

High income groups in urban areas of Mexico consume the highest proportion of fluid milk. These consumers have gradually come to prefer convenience dairy products, which provide more security in terms of safety, satisfying their quality expectations on caloric intake and social status (Alvarez, 2009). Dairy products have been relatively expensive in Mexico; in fact, recently, the minimum wage has increased slower than the price of pasteurised milk (Jimenez et al., 2011).

Table 9 Dairy consumption in Mexico. Source: (IFCN, 2014)

Dairy consumption	2004	2006	2008	2010	2011	2012	2013
Country consumption (mill t ME)	13.3	13.46	13.5	13.75	13.79	14.02	14.03
Population (mill people)	103	107	111	114	116	117	118
Consumption (kg ME/capita)	129	125	122	120	119	120	118

The impoverished and a low-income population in Mexico will continue to need accessible milk in the form of imported powder for reconstitution into fluid milk at subsidised prices. Mexico's government attempts to encourage increased use of domestically produced fluid milk for this purpose has achieved little success (Dobson & Jesse, 2009).

2.2.2.3 NAFTA

The United States, established the North American Free Trade Agreement (NAFTA) with Canada and Mexico on January 1st of 1994; this agreement took place even though Mexico is still a developing, semi-industrialised country (Garcia et al., 2000). NAFTA has had a significant impact on the dairy sector in Mexico. Under this agreement, tariffs for imported powdered milk from the United States were gradually phased out and completely eliminated in 2008 (USDA, 2013). The decrease in tariffs represented new opportunities for American dairy exporters to enter Mexican markets (Dobson & Jesse, 2009).

Mexico has been forced to import dairy products as it is unable to produce enough dairy products for its domestic demand (Garcia et al., 2000). The fast growth of US dairy exports into Mexico started before NAFTA, boosted by an increase in population and an expanding economy (Ramirez, Jones, Arellano-Vaca, & Raper, 2010).

Prior to the formation of NAFTA, the government of Mexico used import licensing and tariffs to protect the Mexican industry, raise revenues, and achieve policy objectives, (Dobson & Proctor, 2002). In this time period, it also imported milk powder through CONASUPO which was a government monopoly importing agency. CONASUPO supplied another government organisation named Liconsa with milk powder to produce reconstituted milk sold at subsidised prices to low-income Mexican people (Tanyeri-Abur & Rosson, 1996).

The main dairy processors before NAFTA were: Lala, Alpura, Boreal and Guilsa (Dobson & Proctor, 2002). Nestle was a strong producer of reconstituted milk, ice cream, filled milk and

other products. This company operated processing plants in Mexico and influenced trade agreements and dairy policies affecting the dairy industry in Mexico (Dobson & Proctor, 2002).

2.3 Agriculture in Jalisco

The state of Jalisco is located in the West of Mexico and its capital city is Guadalajara. Jalisco is one of the most important states of the country, historically and as a provider of important natural resources. It is the third most important state economically with its industry centralised in Guadalajara, the second largest metropolitan area in Mexico (Government of Jalisco, n.d.).

Figure 4 Map of Mexico. Source: (Google maps, 2015).

The state of Jalisco has an important agricultural presence in Mexico. It is the biggest producer of milk in the country, providing 19% of the total milk production (SAGARPA, 2014). The main dairy region of Jalisco is Los Altos; this region is north-east of Guadalajara and provides approximately 12% of the total Mexican dairy supply (Wattiaux et al., 2012). Jalisco is also the second largest producer of maize for grain, producing 15% of Mexico's total production (SIAP, 2015). The high concentration of farmers in the region has generated a need for feed and concentrates for cattle.

Table 10 Milk production by state 2014 (Thousands of litres). Source: (SAGARPA, 2014)

Jalisco	2,085,861	18.72%
Coahuila	1,361,618	12.22%
Durango	1,036,137	9.30%
Chihuahua	1,007,347	9.04%
Guanajuato	772,560	6.93%
Veracruz	693,951	6.23%
Mexico	460,169	4.13%
Puebla	443,442	3.98%
Hidalgo	413,097	3.71%
Chiapas	410,736	3.69%
Aguascalientes	384,294	3.45%
Queretaro	360,907	3.24%
Others	1,711,005	15.36%
Total	11,141,124	

The main feed types utilised for feeding cows in this region are maize silage, hay and concentrates. Almost half of the farms of the region graze their cows, especially during summer. Feed is the most important input and accounts for about 57- 70% of production costs (Olmos et al., 2015; Villagomez et al., 2014). The grains used for concentrates by these farmers are mainly maize, sorghum, dry distiller grain, canola meal, soybean meal, cotton seed and wheat. These grains are brought from different parts of Mexico as well as other countries such as the United States and Canada, with approximately 30% imported (Olmos et al., 2015).

Even though the region has intensive dairy farm systems using high technology, the majority of dairy farms are small sized with low technology. More than 90% of the farms have Holstein Friesian cows in intensive feedlots or semi-intensive dairy farms. The average herd number is 70 and farms use family labour (Olmos et al., 2015). Milk production in Jalisco is seasonal; during January and April, production is relatively low but increases gradually in May and at its peak production from September to November (Olmos et al., 2015). Generally, there is a lack of adequate sanitary controls, cooling equipment and good technical training and old production methods such as hand milking still exist. There has been some technical improvement in the introduction of particular genetics through imported cows and semen, but the progress has been moderate (Wattiaux et al., 2012).

In Jalisco, small-scale farming has shown promising options for an effective utilisation of natural resources in the face of a challenging economic environment. This type of farming has the advantage of daily sales, which provides families more certainty with a steady income. If these small farms provide enough advantages to family members, they will not have to migrate from their communities (Espinoza, Espinosa, Bastida, Casteñeda, & Arriaga, 2007). The small sized farms support rural families financially in the communities they operate within and for this reason, they have not disappeared (Jimenez et al., 2011). This is the case despite the fact that small sized dairy operations are at a disadvantage compared to high technology dairy farms. The main weaknesses of these sized farms, however, are: low profitability through low milk volume; high costs; and poor milk quality. These are the factors that keep these farms excluded from competitive markets.

The lack of competitiveness mainly occurs because it is unfeasible to obtain low volumes of milk across scattered locations, meaning higher costs than larger farms that produce more volume in one location. Therefore, low yields per cow and small volume production in small dairy operations limit the advantages of economies of scale and making efficient utilisation of resources, which causes higher costs and poor levels of competitiveness (Jimenez et al., 2011).

The main processors that buy milk in the state include: Liconsa, Nestle, Sello Rojo, La Campiña and Alpura, as well as small and medium sized cheese and dairy processors (Vazquez & Aguilar, 2010). Lechera Guadalajara, known as Sello Rojo, collects more than 30% of the milk from the region (Vazquez & Aguilar, 2010). Nestle collects about 350 million litres of milk per year from Jalisco, being approximately 16% of the state's total production (Mortera, Rogelio, personal communication, August 27, 2015).

2.4 Cooperatives in Mexico

2.4.1 Background of cooperatives in Mexico

In Mexico, the cooperative movement is a long historic tradition (Rojas, 2013). The values related to social justice, seen in rural Mexican communities, are strongly attached to the cooperative movement (King, Adler, & Grieves, 2013). Cooperatives that are seen in Mexico are structured democratically with the intention of: avoiding the abuse of members; guaranteeing a

reasonable and equal distribution of resources; enabling access to the benefits of collective efforts (King et al., 2013). The term "communal ownership" is profoundly grounded in Mexico's indigenous communities and was re-established in the land reform that created the *ejido* (communal land) system. Although communal ownership of land has different dynamics from communal ownership in a collective, both promote the value of equal distribution of benefits and collective ownership, which are against the neoliberal ideology (King et al., 2013).

Even though the collectives did not come from Mexican traditions, some principles shared are: communal protection; mutual obligation; and shared responsibility (Esteva, 2010). Rural communities in Mexico have the concept of social justice based on mutual assistance and participation in decision making (King et al., 2013). A tradition in rural communities is *Uses and Customs*, which incorporates a *cargo* (unpaid communal service), unanimity-based governance in assemblies and communal councils responsible for managing the organisation of the community (King et al., 2013).

Cooperatives in Mexico have emerged from social struggle and popular agitations in defence of their ideals. Therefore, in Mexico, every cooperative law that has existed reflects its historic moment. In 1910 during the Mexican Revolution, cooperative movement encouraged its own development and protection. As a consequence, this movement had impact and eventually various laws for cooperative societies were written into the 1917constitution (Izquierdo, 2014).

The cooperative movement had its biggest growth between 1934 -1940, under President Lazaro Cardenas, where the government promoted the constitution of cooperatives in urban and rural regions. This programme responded to a policy of cooperative support, where ideas were taken to fortify the state, using cooperatives as a promoter of economic and social development (Izquierdo, 2014).

Mexico was the first country in Latin America to apply an agrarian reform in which cooperatives were thought to play a relevant role. However, today, cooperatives are significantly behind compared to what has happened in other parts of the world (Rojas, 2013).

The law that currently governs cooperatives in Mexico is the General Law of Cooperative Societies, published in August 3 of 1994. The wording of this law attempts to reflect the needs imposed by the Mexican society, including the participation of other laws that regulate the

existence of cooperatives which are: The Constitution of Mexico, The General Law of Corporations, The Law of Public Administration and The Civil Code (Izquierdo, 2014).

The law was written because of the need to review the 1983 version. The writing was informed by 14 national forums and several studies of cooperative legislation from other countries with an outstanding economies based on a cooperative system, including Spain, France, Italy, Germany, Colombia, Israel, England, Costa Rica, Panama and Chile (Izquierdo, 2014).

Among the demands for change, the following were detected as most important:

- Elimination and control of surveillance by the executive power
- Access to the courts at a local and regional level in an effort to resolve disputes arising
- Administrative simplification
- Imperative need of training in aspects of cooperative society
- The need of an agreement to facilitate commercial development and access to financing
- The preservation of the principles and rights of social welfare and a solid organisation, enabling the integration of cooperatives nationwide (Izquierdo, 2014).

The GLCS of 1994, defines a cooperative as: "an organisation based on common interests and the principles of solidarity, self-help and mutual aid, in order to meet individual and collective needs, through the economic activities of production, distribution and consumption of goods and services" (DOF, 1994, p. 1).

The General Law of Cooperative Societies establishes that the cooperative societies should work under the following principles:

- Freedom of voluntary association
- Democratic administration
- Distribution of earnings in proportion to participation
- Encouragement of a cooperative education and unified economy
- Participation in the integration of the cooperative
- Respect for individual rights of members belonging to any political party or religion
- Promotion of an ecological culture (DOF, 1994).

The following is required for the establishment of a cooperative:

- Each member must have the right to one vote, independently of their shares
- All members must have the same rights and obligations, regardless of gender
- The duration must be undefined
- It must be integrated by at least five members (IMDECOOP, n.d.).

According to the GLCS of 1994, there are three types of cooperative societies: consumers of goods and/or services; producers of goods and/or services; and savings and credit. Consumer and producer cooperatives are able to be grouped as federations or unions. Federations are able to be grouped as cooperatives of the same economic activity, whereas unions are able to be grouped as cooperatives of different economic activities (DOF, 1994).

Consumer cooperatives. These cooperatives have their members associated with the objective of obtaining goods and services for them, their homes or their activities for production. These cooperatives are dedicated to activities of supply, distribution and provision of services (IMDECOOP, n.d.).

Producer cooperatives. These cooperatives have their members associated to work in common in the production of goods or services, providing their personal, physical or intellectual work. Independently of the type of production, these societies are able to store, conserve, transport and commercialise their products (IMDECOOP, n.d.)

The cooperative stratification criteria used by "*Comision Intersecretarial para el Fomento Cooperativo"* (CIFC) is: micro (no more than 15 members); small (16 – 100 members); medium (101 – 250 members); and large (more than 251). The majority of the cooperatives are in the micro and small sector. These cooperatives belong to family businesses that adopted the legal cooperative form. According to some studies, the cooperatives that are normally successful are in the large sector, having more than 300 members (Rojas, 2013).

Unfortunately, it is not known exactly how many agricultural cooperatives exist in the country; the last official information provided by CIFC indicated that in 1994, there were 2753 registered cooperatives in the agricultural sector. The total members registered were 107,809. There is a lot

of uncertainty relating to the number of cooperatives that exist, given that there are not many studies related to the type of association or its economic efficiency (Rojas, 2013).

According to the Mexican Ministry of Foreign Affairs, in the year 2000, there were more than 20,000 cooperatives registered, of which only 10,156 were active. Of these, 6925 were involved in production and 3,231 in consumption, totalling 469,200 members (Rojas, 2013). It is estimated that Mexico has more than seven million people directly related to cooperative activities, of which 5 million participate in the savings and popular loan sector (Izquierdo, 2014).

According to the GLCS of 1994, the governance and management structure of cooperatives has a general assembly, board and supervisory committee who are in charge of the internal direction, management and surveillance of the cooperative.

The general assembly is the greatest authority; it resolves all the businesses and important issues cooperatives face and establishes the general rules for social performance.

The general assembly also resolves:

- Modifications to the constitution
- Approval for systems and plans for production, work, distribution, sales and financing
- Growth or reduction of equity capital
- Designation and removal of members from the board and supervisory committee, special committees and specialists hired
- Examines the internal accounting system
- Application of penalties to members
- Distribution of returns and surplus
- Approval of ecological measures that are proposed

The board is the executive organ of the general assembly and represents the cooperative; it has the right to designate one or more managers to take certain responsibility and also one or more commissioners in charge of managing special sections.

Management is in charge of the cooperative as a business. It makes sure that the decisions made by the board are executed, achieving the cooperative's annual business plan and managing the

daily operation of the cooperative. The board consists of, at least, one president, one secretary and one other member. The supervisory committee supervises all the activities of the cooperative.

According to Izquierdo (2014), Mexican law is far from having an authentic cooperative spirit; rather, there is a culture of regulating law instead of law promoting cooperatives. Although there has been some significant progress, such as full autonomy, both constitutionally and operationally, there has been little progress since its promulgation from the national cooperative movement. In fact, cooperatives continue to experience stagnant growth, despite the facilities for their creation and registration.

Izquierdo (2014,) reason that in the creation of the law, legislators were forced to incorporate cooperatives with commercial law because there was no available document that would empower the Federal Congress to legislate on cooperatives. For that reason and in order to create a law that would regulate them, they were included within commercial law, although it is recognised that these companies are non-profit. Therefore, this confusion in the law has resulted in confusion of the nature of cooperatives in Mexico, making them appear both subject to private laws and ones. With the significant differences between these laws, issues are therefore present.

The biggest criticism made of the GLCS of 1994 is that this law severed the cooperative movement from the state, leaving cooperatives to compete without: any safeguard against the open market; any real associative freedom; a product that really recognised cooperativism as leverage for national development; and finally without social integration. In fact, it has existed without any clear direction, surviving in a market without the aid from the state, which is impregnated with neoliberal ideology, demonstrating a lack of sensitivity towards this sector, abandoning it to its own luck (Izquierdo, 2014).

The new laws presented were not written to encourage cooperatives but rather were simply about cooperative societies, changing the original essence to make them a corporation. This left the cooperative movement without a good policy (Ruiz de Chavez, 1992).

Among the different cooperative laws that have existed in Mexico, Izquierdo (2014) argues there has been confusion with respect to their legal nature. Considering the idea that cooperative firms

are not corporations, it is an error to group them into this category since they are recognised in the social sector of the economy since 1983 as mentioned in the article 25 of the constitution.

According to Izquierdo (2014), it is necessary to rethink the role of cooperatives in Mexico. In order for cooperatives to achieve success, the government needs to create a favourable environment for their growth and development and prioritising their work with organisations such as: the International Labour Organisation (ILO); the United Nations (UN); and the International Cooperative Alliance (ICA). This would allow the assessment of the establishment of the frameworks and policies than can define the role of the state in terms of cooperatives, considering the advantages offered and improving the lives of Mexican people.

2.4.2 Challenges for the development of cooperatives in Mexico

Cooperatives in Mexico have not been guided by the universal cooperative principles and commitment with the community. There is lack of education, training and culture relating to this matter and no capacity to stimulate the creation and development of new cooperative organisations. There is very little government support for financing cooperatives and, in addition, no public technical assistance such as management, accounting, financial services or marketing (Izquierdo, 2012).

The lack of official programmes to support cooperatives with flexible credit coupled with the political and economic structure determined by capitalist policies of exportation, exploitation of natural resources, prevalence of monopolies, foreign banks and multinational companies makes development difficult for cooperatives (Izquierdo, 2012). Although, Izquierdo (2012) reasons that the biggest limitation has been the lack of commitment from the Mexican governors, she also states that far from supporting this sector, it has been abandoned because of the political notion of cooperatives being against a capitalist system.

The weaknesses and obstacles that limit the development and expansion of agricultural cooperatives in Mexico follow:

- Corporative companies using organisations of farmers as cooperatives just as a vehicle to manage resources from different government dependencies and to enlarge their social support, without any interest in implementing the project that embodies cooperatives as a social movement.

- Low commitment to the principles and values of cooperatives. The principle of obligation to provide the services of education, training and support to its members has been the main principle to fail, according to some studies (Rojas, 2003).
- Abandonment of farms has caused the early disappearance of many cooperatives, making it difficult to consolidate as a business. According to studies (Rojas, 2003), most cooperatives do not have any type of government support or subsidy. There are no specific programmes that promote cooperatives, generating a difficult economic environment.
- In many cases, cooperatives are created just to cover a legal requirement so as to allow access to public resources, but not with genuine interest from its members. Many of these pseudo-cooperatives are dissolved after obtaining public funds.
- The uncontrolled increase in delinquency and the migration of people for economic reasons are daily problems that affect the process of development and consolidation of cooperatives in the rural sector of Mexico.
- The *machismo* (male dominance) and lack of gender equity is a problem that not only affects agricultural cooperatives, but Mexican cooperatives in general (Rojas, 2013).

Izquierdo (2012) states that the current problem the cooperative sector is facing in Mexico is mainly due to the economic model that is in place. She reasons that Mexican capitalism under the neo-liberal model excludes the cooperative movement, taking it away from national development plans. Despite this, she identifies successful cooperative societies that have survived within the economic politics that Mexico is living. Therefore, Izquierdo (2012) sees these societies as proof that an alternative economy can be reached, with more justice in an inclusive society.

2.4.3 Cooperatives of farmers in Jalisco

Cooperatives play an important role in the agriculture of Jalisco. There are more than 20 cooperatives in Jalisco with 4000 farms as members. These are primarily consumer cooperatives, whose main objective is to supply feed input (concentrates) to its members at the lowest possible cost (Olmos et al., 2015). They are able to achieve this by leveraging the collective bargaining power of members via the cooperative union.

Cooperatives of farmers have been constituted as formal groups to grow the capacity of their members and to obtain benefits to help increase productivity. This is done in order to face regional dynamics, a global market economy and improve channels of commercialisation. These cooperatives serve a variety of functions, ranging from increasing bargaining power to helping farmers to buy feed and access projects and programmes (Vazquez & Aguilar, 2010).

Cooperatives are able to overcome challenges by providing their members with useful services. These services go from information, natural resources, technology, communication, training and facilitating their presence in the decision making process (FAO, 2012). Cooperatives also give priority to maximising the satisfaction of member needs by offering services that can create a state of well-being for their members with a criterion of success going beyond simply optimising profitability (Michelsen, 1994).

Cervantes (2002) found while farmers have benefitted from cooperative membership, cooperatives are viewed by some members only as an instrument, without a full understanding of cooperative principles. Cooperatives are defined by Mexican law (GLCS of 1994) as: "an organisation based on common interests and the principles of solidarity, self-help and mutual aid, in order to meet individual and collective needs, through the economic activities of production, distribution and consumption of goods and services" (DOF, 1994, p. 1). However, Cervantes reasons that some farmers only participate in cooperatives to obtain collective goods such as feed, milk cooling tanks or to gain access to projects and programmes, without following the cooperative principles of solidarity, self-help and mutual aid established by the Mexican law. Cervantes also noted that some farmers do not have personal trust or a relationship with one another and that there is a lack of personal relationship between cooperative members, as the formation of the cooperative has been promoted by outside forces.

There is a large consensus between farmers from Jalisco that it is complicated to achieve successful results working collectively. Some of these farmers would prefer to sell their cows or sell their milk to intermediaries before participating in an organisation such as a cooperative (Cerventes, Alvarez, & Perez S, 2002). According to Cervantes (2002), the reason is mainly because of previous bad experiences with farmer perceptions being as follows:

- Not everybody thinks the same way and some might take advantage of the resources.

- Collective organisations never work; they are used to cheat on others.
- There are problems among members in relation to the required contributions being equitable.
- Disagreement among members in relation to operation procedures.

According to Cervantes (2002), it is not desirable for these organisations to disintegrate. Collective action is an alternative to making these small production units more viable. It is important to consolidate strategic factors such as buying in volume and using consultancy services collectively (Cerventes et al., 2002).

Most cooperatives in the region are established either to sell concentrate feed to farmers at a lower price or to increase farmer collective bargaining power; this shows that there is potential for cooperatives in the region to begin purchasing members' milk and move into manufacturing and processing (Wattiaux et al., 2012).

One example of a processing cooperative is Centro Lechero Cooperativo de Los Altos de Jalisco (CECOPAL). This cooperative processes milk into traditional Mexican cheeses as well as cheeses which have traditionally been imported, such as cheddar. CECOPAL also sells pasteurised milk, adding value to its members' product (Wattiaux et al., 2012).

Another cooperative that has processed its members' milk is Prolea. This is a cooperative of farmers founded in 1991. There are 575 members in the cooperative and it has four main departments, including:

1. Selling and processing of milk producing 54,000 litres per day, selling to different buyers, according to the quality of milk.
2. Feed. The cooperative purchases the ingredients and mixes its own concentrate for the cows in a plant. The purpose is to make a low cost and good quality feed for cows. Their prices are usually 30% below market level. The cooperative also buys grass seeds to increase grass production.
3. Agriculture. Prolea offers agricultural contractor services to harvest grain and forages.
4. Rearing calves for members.

The cooperative also supplies credit, extension services and health care to its members (Wijnands et al., 2010).

Clugston (2012) suggested Jalisco strengthened cooperatives by processing and marketing their own milk. This strategy would not only increase farmers' incomes by adding value to their milk, but would enhance the socioeconomic sustainability of the dairy industry. This would also enable farmers to gain control over the quality standards which have been imposed on them by the companies that buy their milk.

Rather than purchasers imposing external quality standards on farmers and using them as a means of control, the cooperative members themselves would have the capacity to determine premiums and minimum quality thresholds (Clugston, 2012). Therefore, farmers could then make management decisions accordingly, rather than feeling like they were adapting to a system that has been forced on them.

Chapter 3

3 Literature Review

3.1 Background of Cooperatives

A general definition for cooperatives is: "an organisation in which those who transact with the organisation also own and formally control the organisation, and derive significant benefits from those transactions over and above any financial returns they derive from their investment in the organisation" (Evans & Meade, 2006, p. 1).

Cook (1997) defines an agricultural cooperative as an agricultural producer organisation that is user owned, user controlled and user benefited. A cooperative is foremost a business organisation. However, it is distinguished from investor-owned businesses by democratic governance, and ownership and control by its members, who are also its customers. A cooperative is well suited to solve problems of market failure because, in combination with professional management, it can reduce costs by drawing on its members' knowledge, commitment and customer loyalty (Mellor, 2009).

The International Cooperative Association (ICA) defines a cooperative as: "businesses owned and run by and for their members. Whether the members are the customers, employees or residents, they have an equal say in what the business does and a share in the profits" (ICA, 2011). Cooperatives and the principles of them evolve in response to changes in the socioeconomic environment; this allows them to contribute strongly for human development (Parnell, 1995).

3.2 Principles of Cooperatives

The ICA (2011) adopted the following seven cooperative principles:

1. Voluntary and open membership

2. Democratic member control

3. Member economic participation

4. Autonomy and independence

5. Education, training and information

6. Cooperation among cooperatives

7. Concern for community

The ICA also points out that cooperatives are based on the values of self-help**,** self-responsibility, solidarity, equality and democracy**.** The Alliance mentions how cooperative members believe in the ethical values of honesty, caring for others, openness and social responsibility (ICA, 2011).

Although the intention of a cooperative is to make a profit for its members, cooperatives also have non-economic objectives (ICA, 2011). The additional long term goals of cooperatives relate to environmental responsibility, sustainable economic growth and social development; clearly not only focused on maximising profits with short term goals (ICA, 2014a).

The motivation and meaning of cooperatives is to be successful by letting people to work collectively in order to promote sustainable organisations contributing to the issues relating to poverty and prosperity (Donoso, 2003). However, in order to compete and survive on the market, cooperatives need to be financially resilient (Challita, Sentis, & Aurie, 2014).

3.2.1 Types of cooperatives

Globally there are different types of cooperatives, including:

***Producer cooperatives*.** Producer cooperatives are owned by people who produce similar types of products: farmers who grow crops, raise cattle or milk cows, or by craft workers and artisans. By banding together, cooperating producers leverage greater bargaining power with buyers. They also combine resources to more effectively market and brand their products (NZCOOP, 2014). These cooperatives have their associated members work communally in the production of goods or services, providing their personal, physical or intellectual skills. Independently of the type of production, these societies are able to store, conserve, transport and commercialise their products (IMDECOOP, n.d.).

Worker cooperatives. Worker cooperatives are owned and governed by the employees of the business. They operate in all sectors of the economy, providing workers with both employment

and ownership opportunities (NZCOOP, 2014). Worker cooperatives are businesses that are owned and controlled by the workers, rather than the end-users, of a business' products or services. In this type of cooperative, worker members directly benefit from the business. Profit distribution is based on job position, hours worked, seniority and salary. Worker cooperatives are found in a wide variety of sectors, from transportation to manufacturing to home health care (University of Wisconsin, 2015).

Marketing cooperatives. Marketing cooperatives are businesses that are owned by and benefit members who use the cooperative to help sell their products. By pooling member products, a cooperative can negotiate better prices and provide access to larger markets. A cooperative can also add value by further processing member products, which increases the product price and demand. Many varieties of agricultural cooperatives fall into this category (University of Wisconsin, 2015). In some cases, a marketing cooperative simply purchases a commodity from its members and resells it to food manufacturing or processing firms after providing some minimal services such as assembling and grading the commodity. After the cooperative sells the commodity to a manufacturer or processor, it distributes any additional revenue minus transportation or handling costs to members as patronage refunds. In other cases, the cooperative may process the commodity and sell the processed product to consumers or retailers. In those cases, the patronage refunds include any value added to the commodity by the cooperative (Royer, 2014).

Consumer cooperatives. Consumer cooperatives are owned by the people who buy the goods or use the services of the cooperative. This type of cooperative may sell consumer goods such as food, or provide housing or electricity (NZCOOP, 2014). Members are associated to obtain goods and services. These cooperatives are dedicated to activities of supply, distribution and provision of services (IMDECOOP, n.d.). Consumer cooperatives are organised to provide the specialised goods or services that their members want to buy. By combining member demand, a cooperative can provide better availability, selection, pricing, or delivery of products or services to individual consumers, businesses or farmers (University of Wisconsin, 2015).

Farm supply cooperatives. Farm supply cooperatives supply members with input they use in farm production. This sort of cooperative may manufacture these inputs or purchase them from other firms (Royer, 2014). They provide service and input to member farmers to help them

produce their goods. Many farmers purchase basic input such as seed, fertiliser and farm chemicals from their cooperative. Farmers collectively establish a firm to negotiate better terms of purchase for basic agricultural production input (University of Wisconsin, 2015). These cooperatives particularly, but not exclusively, are for specialised farm goods or services which might not otherwise be available. They are also active in areas where the quality of critical input (such as stock genetics) or specific farm attributes (such as farm lending risk or insurability) are important but hard to discern, and/or where suppliers have market dominance (such as in fertiliser supply) (Evans & Meade, 2006).

Banking/credit unions cooperatives. Banking cooperatives are financial entities which belong to their members, who are at the same time owners and customers. They can be set up as a bank, a building society or a credit union. A credit union is a member-owned financial cooperative that is democratically controlled by its members and provides financial services at competitive rates. When one member needs credit, he or she may borrow from the union at a lower rate of interest than from a traditional bank (NZCOOP, 2014).

Multi-stakeholder cooperatives. Multi-stakeholder cooperatives are organised around a broadly defined goal that encompasses the specific interests of a combination of multiple member types. Consumer (either individuals or businesses), producer, and worker members all use the same cooperative to facilitate buying, selling, or employment transactions between members. There may even be a class of membership for investors. The multi-stakeholder cooperative is a newer variation of the cooperative structure and is built around the interdependencies of a particular set of competing economic interests. This unifying function is counterbalanced by the challenges in meeting member needs that are inherently different (University of Wisconsin, 2015).

3.2.2 Governance

Governance in cooperatives is closely related to the concept of corporate governance in shareholder profit driven corporations (Bijman, Hanisch, & Sangen, 2014). Corporate governance started from the statement that management efficiency depends on the ownership structure of a company (Berle & Means, 1932). One definition of corporate governance is “the design of institutions that induce or force management to internalise the welfare of stakeholders” (Tirole, 2001).

The main studies about corporate governance analyse the impact of the constraints placed on decision makers in order to seek a behaviour that adds to maximum value to the business. Successful corporate governance is designed to contribute proper incentives for management in order to pursue owner objectives and ease effective monitoring (Challita et al., 2014).

Governance entails specific mechanisms and strategies to generate profit. The impact of identity and formation of shareholders can be seen on dividend distribution policies and returns (Shleifer & Vishny, 1986). The three main factors indicating the performance level of corporate governance are: the objectives of the organisation; the allocation of resources through monitoring and control; and the efficiency of the business (Challita et al., 2014).

The debate relating to this differs from cooperative governance in relation to profit-driven companies although there are some similarities. It is similar in relation to the agency relationship between owners and managers, also seen in cooperatives, especially if they are large and diversified (Fama & Jensen, 1983). It differs in that cooperative purpose is to maximise their owners' value in a way that is not only financial, with the expectation that cooperatives have a long term vision for their organisation (Challita et al., 2014). Another distinctive feature of a cooperative is that members take an active role in setting its direction (Mellor, 2009).

On traditional cooperatives, the board consists of members of the cooperative. The directors are members that make use of the services delivered by the cooperative. The key responsibility of the board is to make sure that the interests of the members as users are taken into the operational and strategic decisions of the business; this differs from the IOFs where the board represents owners only as investors (Bijman et al., 2014). Although this board composition secures members' trust in the board, it may make cooperatives less efficient than IOFs since the member directors may lack of skills and knowledge necessary to sit on a board (Bond, 2009).

As an example of a traditional cooperative model, in South America the member-owners delegate formal authority, decision management and control rights to the board on operational and strategic decisions; still, they retain control rights on some major decisions, like mergers, acquisitions and dissolutions (Chaddad & Iliopoulos, 2013).

In this traditional governance model, the board is responsible for decision control but only a subset of board members is responsible for decision management. In general, the chairman and one or more executive directors are empowered with real authority. As a result in this model, the president or chairman plays the role of president of the board and also the CEO (Chaddad & Iliopoulos, 2013).

In addition to the board, the cooperative law in South America usually mandates the existence of another governance body known as the supervisory board. This board integrates at least three elected members. Non-members are not allowed to serve on the supervisory board. Members of the supervisory board may not be members of the board. The main role of the supervisory board is to monitor the cooperative board and management with particular focus on internal auditing (Chaddad & Iliopoulos, 2013).

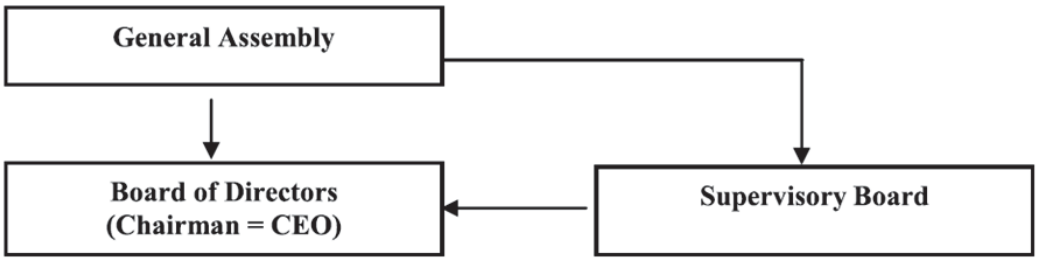

Figure 5 Traditional cooperative model in South America. Source: (Chaddad & Iliopoulos, 2013)

Cooperatives have evolved, responding to business pressures by bringing in outside directors with specific expertise and at the same time securing member dominance. Although member directors are somehow advantageous for cooperatives being more connected to the members and are often professional in production management, they may lack of management and marketing knowledge compared with professional and experienced managers (Deng & Hendrikse, 2015).

As a cooperative grows and develops, it needs full time professional executives as the competence and skills of most members are insufficient for this level of cooperative management (Feng, 2011). Currently, there are more cooperatives recruiting directors and the rest of the management team from the labour market (Bijman, Hendrikse, & van Oijen, 2013). Hiring professional directors generates advantages for cooperatives competing with an IOF. In addition,

it is necessary for cooperatives to include outside directors on the board not only to bring specific expertise but also to ease a negative vision bias (Deng & Hendrikse, 2015).

An example of a non-traditional model of governance in South America is where member-patrons delegate formal authority to the board, but in this model, the board in turn delegates real authority to the CEO. The CEO may be a hired professional or a member of the cooperative. In this model, there is separation of decision control, which is retained by the board, and decision management (by the CEO) and there is no board Chair-CEO duality (Chaddad & Iliopoulos, 2013).

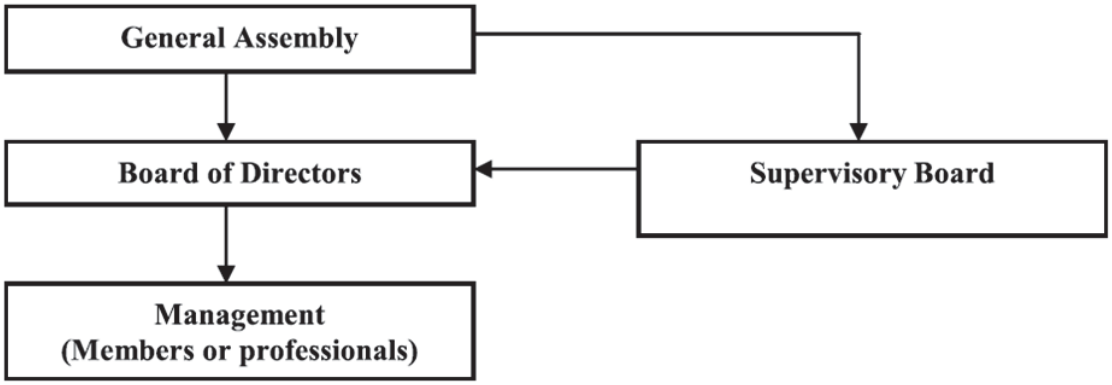

Figure 6 Cooperative extended traditional model in South America. Source: (Chaddad & Iliopoulos, 2013)

Finally, the main objectives of governance in cooperatives are to provide: balanced effective control by the users-members-owners over important decisions of the cooperative; mechanisms of internal and external monitoring; and management prudence so as to run the cooperative. However, as cooperatives increase in size, as members turn into a more heterogeneous group and as more equity capital is needed, internal governance gets more challenging. Therefore, several models have been created in order to work with these challenges (Bijman et al., 2014).

3.2.3 New cooperative models

The traditional model of cooperatives has difficulties in funding growth from equity capital, and simultaneously, in borrowing because of lack of equity (Shadbolt & Martin, 2005). The characteristics of property rights in the traditional cooperative reduce the member incentive to invest (Nilsson, 2001). These characteristics include: ownership rights restricted to member-patrons; residual return rights non-transferable, non-appreciable and non-redeemable; and

benefits are distributed among members in proportion to patronage. This has resulted as a vaguely defined property rights structure, being subject to investment and governance constraints (Chaddad & Cook, 2004).

In relation to the constraints on investment and governance, Cook and Iliopoulos (2000) argue that "the characteristics in a well-defined property rights structure cooperative such as closed membership, obligatory member commitment, and transferable and appreciable equity instruments would result in greater incentives to invest in a cooperative than ill-defined property right policies such as traditional cooperatives characterised by open membership, voluntary member commitment, non-transferal and non-appreciable equity instruments, and no formal short term equity redemption plan" (Cook & Iliopoulos, 2000).

Property right is a claim to a use or to benefit and is not limited to physical things (Barzel, 1989). In the case where a person does not have clear possession of an asset, there is no incentive to protect its value. In addition, if property rights cannot be transferred, the probability that the asset is finally owned by the person who will use it best is reduced (Cook & Iliopoulos, 1999). A property right is a protection against the selection that other people could make over an asset that they do not own (Furubotn & Richter, 2000). As much in cooperatives as in capitalist firms, property rights must be exercised by the owners, as they are in charge of carrying out the control (Chaddad & Cook, 2004).

Therefore, in order to increase incentives to invest in cooperatives within the traditional model, organisational innovations in property rights have been designed, giving rise to the non-traditional models (Chaddad & Cook, 2004; Cook & Plunket, 2006). The new models such as 'new generation cooperatives' and 'hybrid cooperatives' try to retain the traditional strengths of a cooperative, such as ownership and control by its members, while overcoming weaknesses like limited access to equity capital to fund growth (Shadbolt & Martin, 2005). These cooperative models experiment with innovative ownership and governance structures to increase their efficiency and survive in increasingly competitive environments (Chaddad & Iliopoulos, 2013).

3.3 Agricultural cooperatives

3.3.1 Agricultural cooperatives overview

Producers and farmers often form agricultural cooperatives to protect the current and future value of farm assets (Cook & Chaddad, 2004). They also form cooperatives using farmer collective action to overcome market barriers (Markelova, Meinzen-Dick, Hellin, & Dohrn, 2009). By organising themselves as cooperatives, farmers can increase the efficiency of agricultural production by working collectively. They can also gain stronger bargaining power in a local or regional market (Hendrikse, 2002). Agricultural cooperatives improve rural living of their members in a number of ways: with value added products made and marketed by the cooperative; reducing uncertainty through lower transaction costs, collective bargaining; and assurance of higher average incomes (Nicholson et al., 1998). Although the development of activities such as processing or commercialisation increases the added value of these products, it requires significant investment, including machinery, installations and/or training of both members and employees (Cook & Chaddad, 2004; Nilsson, 2001).

Agricultural cooperatives have significant advantages for their members through joint ownership (Valentinov, 2007). The members obtain valuable services participating in a cooperative as they get credit, input and protection of their rents as members become both sellers and buyers of their own product. In traditional cooperatives, once the product from the member farm is supplied to the cooperative, this production is sold directly or with minimum transformation (Cook & Chaddad, 2004; Nilsson, 2001). The role of an agricultural cooperative has been to improve farmer returns by reducing transaction and production costs in the market channel, counterbalancing the negative economic impacts of market power and reducing producer income risks (Cook & Chaddad, 2004). As a result, they move to a better position to compete with larger businesses in the market.

Agricultural cooperative advantages can be seen in many contexts globally. In Ethiopia and Kenya, improved access to formal markets through dairy cooperatives has raised smallholder productivity (D'Haese, Francesconi, & Ruben, 2007). Dairy cooperatives also increased the amount of milk marketed by smallholders in India (Alderman, 1987). Successful job creation in rural communities further stimulates rural economies (Goel & Bhaskarkan, 2010). Collective action may also facilitate economies of scale (Markelova et al., 2009). However, social and

logistical challenges exist in the collective marketing of perishable goods (Holloway, Nicholson, Delgado, Staal, & Ehui, 2000). For these reasons, it is important to assess whether costs may outweigh the expected economic benefits (McRoberts, Nicholson, Blake, Tucker, & Diaz Padilla, 2013).

Agricultural cooperatives play an important role in the world and find their most successful development in economies that have the most competitive and refined agricultural sectors, being often dynamic, complex and large (Hansmann, 1996). In such economies, cooperatives are one option for accomplishing effective coordination by increasing competition in global markets, improving the situation for agricultural producers by differentiating their products, accomplishing scale economies in marketing and processing, and coordinating the supply chain to deliver better channels of communication between producers and consumers (Evans & Meade, 2006).

In developed countries, cooperatives are an important organisational structure in many agricultural markets. In Europe, cooperatives account for over 60% of the harvest, handling and marketing of agricultural products and more than 50% of global agricultural output is marketed by cooperatives (Galdeano, Cespedes, & Rodriguez, 2006). In Germany, 38% of the agricultural land is operated by cooperatives. In France, 30% of all agricultural sales come from cooperatives, while Canadian agricultural cooperatives have generated 40% of total farm cash receipts. In the United States, 14 cooperatives have been in the list of the 500 largest Forbes firms. Israel has over 80% of the agricultural production managed by cooperatives. The Swedish cooperatives hold 95% of the dairy market. In Japan, the agricultural cooperatives have outputs of USD 90 billion with 91% of all Japanese farmers as cooperative members. In New Zealand, 3% of the GDP is generated by cooperatives; they represent 95% of the dairy market and 95% of the export dairy market (ICA, 2014b).

Two examples of dairy cooperatives that have played a major role in the dairy system are India's Gujarat and Fonterra from New Zealand; these cooperatives provide a level of global leadership (Goldberg & Kerry, 2006). In New Zealand, cooperatives have been a feature of their agricultural organisation. The dairy cooperatives account for almost all milk processing in the country, exporting the majority of the product (Evans & Meade, 2006).

The adaptation of the organisational structure has been a key strategic factor in the improvement of competitiveness and scale of cooperatives in developed countries. In New Zealand, an adaptation has been promoted by cooperative legislation that is less tied to the principles of traditional cooperatives; this legislation has considerable flexibility compared to the traditional cooperative model. This flexibility gives some variation on the traditional model, improving the efficiency of the use of capital, access to capital and incentives for investment in value added processing and innovation (Evans & Meade, 2006). Although in an international context, cooperatives are considered to suffer some disadvantages compared to investor own firms, they also have particular advantages such as perceived product quality, ethical standards and product reliability.

3.3.2 Agricultural cooperatives in developing countries

Agricultural cooperatives in developing countries work on developing democratic economic organisations in economies coping with considerable inequalities in access to basic social services, income distribution and the territorial organisation of sectors (ICA, 2014a).

Agricultural cooperatives have become a strategic instrument to access the market in direct competition with other companies and large agricultural multinationals. Cooperatives also integrate small farmers into the market, who are subordinated to the decisions of the large producers that form the social base and the administrative structure of many agricultural cooperatives. Small farmers that do not have solid financial backing, or are not integrated in collective structures run the risk of being rejected, leading to an increase in the salaried rural population without land as well as the list of people expelled from the rural area (Gomez, 2014).

In the region of Baixo Tocantins, Brazil, the objectives of cooperatives are related to the sustainable development and commitment relating to society, with the desire to rationally exploit local resources in search of not only economic profitability but also social profitability. In this sense, a high number of agricultural cooperatives of the region are committed to a socioeconomic model; this commitment is evident in decision making, democratic management, better working conditions and commitment to the community (Gomez, 2014). However, there are certain disadvantages that come from the motivation of some groups to create agricultural cooperatives. Family farms in developing countries can find it difficult to realise external

economies of scale and to develop market power comparable to that of their up and downstream trading partners (Valentinov, 2007).

Cooperatives are enabling the permanence, and in some cases, the strengthening of family agriculture through the introduction, modernisation and innovation of agricultural techniques and commercial practices, leading to an improvement in living conditions of local populations. This can be observed whilst preserving traditional practices and favouring the presence of young people in the rural environment, training and forming members and families, and collaborating in the creation of solutions to community problems (Gomez, 2014).

As a subsistence strategy, cooperatives can emerge from an economic necessity connected with resistance to neoliberal policies and community activism. Therefore, cooperatives can intensify the local market and protect against migration and loss of land. Cooperatives have arisen as communities in resistance in places like Mexico where cooperative development is connected to alternative ways of economic, democratic and social organisation (Williams, 2007). According to Ariel Enrique Guarco, President of the Confederacion Cooperativa de la Republica Argentina (COOPERAR) "the main cooperative innovations within the Latin American experience stem from alternative ways of reducing imbalances through the economic organisation of workers, consumers, and small businesses"(ICA, 2014a).

In the year 2050, there will be more than nine billion people to feed globally and family farms and smallholders will provide much of the production required. Therefore, in order to accomplish food security, it is necessary to invest and support cooperatives and rural institutions (FAO, 2012).

Rodrigo Gouveia, the International Cooperative Alliance Director of Policy states that: "cooperative enterprises are a well suited model of business to deliver sustainable development goals. The generation and equitable distribution of wealth, the creation and maintenance of sustainable enterprises and jobs at the local level and the concern for the surrounding community are specific characteristics of cooperatives that makes them well suited to deliver these goals "(ICA, 2014a).

The formation of a cooperative acts as a self-help organisation, responding to human and social needs. Most of the arising cooperatives in developing countries have been formed in response to these needs, seeing the importance of agriculture to the rural sector. Cooperatives in developing countries have a considerable number of low income members (Coffey, 1987). Three ways in which these particular cooperatives differ from others are:

- the major resource each member contributes is labour;
- membership consists largely of former sharecroppers and low income, limited resource farmers; and
- whilst the cooperative is organised for economic goals, the majority also tend to have social goals (Coffey, 1987).

Cooperatives and rural institutions are contributing to food security by promoting smallholders to access information, services and tools needed. This enables them to produce more food, market their products and generate jobs, establishing higher standards of living and increasing food security globally. Cooperatives are able to overcome challenges by providing their members with useful services. These services go from information, natural resources, technology, communication, training and facilitating their presence in the decision making process (FAO, 2012).

Cooperatives play a role in the promotion of social integration, social equity, social services, markets and information (UN, 2009). Moreover, cooperatives can help empower and give a voice to the poor, by enabling them to organise federations and alliances, in order to promote and contribute to capacity-building and human capital investment through members' training and education for the development of entrepreneurial and organisational skills and the sharing of information (UN, 2009). In South America, cooperatives provide sustainable options to some of the socio-economic problems. In Argentina, the social economy provides 10% of the GDP of the country. In Peru, this model provides many jobs, with about 70% of the workforce of the country employed in related to the social economy. With the rise of cooperatives in Latin America, it can be used as an example of the strength of this economic sector (ICA, 2014a).

Cooperatives provide smallholders key skills for their development. They provide valuable knowledge and information, encouraging them to innovate and adapt to a changing market. Some allow smallholders to build their capacity to analyse their productive systems, identify problems, try solutions and adopt technologies and practices more suitable to their operation (FAO, 2012). As a development tool, cooperatives also play a role in helping groups of people generate start-up capital, jobs and tax revenue within a community (Merrett & Walzer, 2004).

According to Charles Gould, International Cooperative Alliance General Director: "Cooperatives are vital to society because they send a message that there are sustainable alternatives to the organisation of business and social activities in a more ethical and people-centred way" (ICA, 2014a).

3.4 Key Factors for Cooperative Success

3.4.1 Success in cooperatives

Cooperatives have faced many challenges as a result of a rapidly changing environment. Historically, economic conditions, legal concepts, adjustments in agriculture, social conditions and political issues are all factors that have influenced the successful development of cooperatives over time (Abrahamsen, 1977; French, 1980). Success can be defined as "the satisfactory completion of something or the attainment of a desired object or end" (Bruynis, Hahn, & Taylor, 2001, p. 1).

Cooperatives have implemented competitive strategies in order to obtain success. These strategies include value-added processing, global expansion, and brand-name development (Bijman & Ruben, 2005). However, the adaptation of these strategies need a considerable amount of capital investments (Baourakis, Doumpos, Kalogeras, & Zopounidis, 2002). For cooperatives as a whole, growth is a prime indicator of success (Mellor, 2009).

The success and failure of cooperatives in agricultural markets has been subjected to research; several authors have defined success of cooperative organisations in different ways.

Sexton and Iskow's (1988) survey of 61 US agricultural cooperatives asked them to rank the cooperatives on a four level success scale. In the study, factors such as open membership, acceptance of non-member business, and employment of full-time management were correlated with self-understood success. According to Sexton and Iskow (1988), since cooperatives are

voluntary organisations, they will only succeed if they provide benefits to their members in excess of what is available elsewhere; cooperatives must be born of necessity and membership may provide intangible benefits such as satisfaction from participation in a democratic organisation.

Research done by Banaszak (2008) collected data from 62 Polish agricultural cooperatives. The main question in the paper asked why some cooperative arrangements in agricultural markets survive and succeed while others fail. They found the variables such as the leader strength, previous business acquaintances, initial selection of members, and number of members had a significant positive impact on the likelihood of success of the organisations (Banaszak, 2008).
The hypotheses of this research were:

- The number of members in producer groups has an indeterminate impact on the likelihood of achieving success by producer groups.
- A stronger leader contributes to saving on internal transaction and coordination costs and, thus, is expected to have a positive impact on the likelihood of the formation of successful producer groups up to a point; however, an overly strong, dominant leader reduces the likelihood of success.
- Selection of members having previous business relationships between them is expected to have a positive impact on the likelihood of the formation of successful producer groups.
- Communication among members is expected to have a positive impact on the likelihood of producer groups achieving success.
- Members' homogeneity is expected to have a positive impact on the likelihood of achieving success by producer groups.

Factors having the most significant impact on the likelihood of success were whether the members had previous business relations before starting the cooperative, as well as the member selection process during cooperative formation. These two variables were also correlated (Banaszak, 2008).

In a study done by (Liu, 2010), he identified factors contribuiting to the successful development of farmer cooperatives in Northwest China and the Gansu province. The key factors identified for the succesful development of cooperatives were the following:

- Policy and legislation: Findings revealed that financial and specialised technical support from the government is important for farmer cooperatives, especially at the initial stage.
- Cooperative initation and leadership: Leadership with vision, transparency, honesty and fairness, with a good understanding of technology, business and marketing capacity increased the unity of members and further led to succesful cooperative development.
- Cooperative members: Farmer awareness, willingness for participation, knowledge and skills relating to the industry of the cooperative were fundamental for successful cooperative establishment and development.
- Cooperative governance: The governance structure of the farmer cooperatives was effective and well-formed for the time they were established.
- Cooperative management: The management determined how successful the cooperative performed as a business enterprise. Efficient financial management added to the success of a cooperative. This study revealed that the market was the key factor affecting member income and this affected member satisfaction.
- Training and education: Training for members on both technical and cooperative knowledge led cooperatives to develop successfully. Government support on training was important for the development of successful cooperatives.

In another survey with 52 American marketing cooperatives (Bruynis et al., 2001), they distinguished key factors to success, understood in terms of longevity, business growth, profitability and member satisfaction. Such factors were:

- Implementation of a management training process.
- Employ an experienced fulltime general manager.
- Regularly distribute accurate financial statements among the management team.
- Use of marketing agreements to secure business volume commitments from the members.

The importance of several independent variables to the success of emerging marketing cooperatives was identified in the research. The main findings that Bruynis et al., (2001) identified were:

- Securing sufficient equity before start up, maintaining adequate business volume and keeping and distributing accurate financial records were often associated with success.
- The importance of previous cooperative experience and continued management training for both the board and manager.
- Marketing agreements also assisted in obtaining success.
- Statistical conformation of the importance of these variables and the relative magnitude of their effect on longevity, profitability, business growth and member satisfaction should help young businesses better position themselves for success.
- Member equity, limited returns, patronage refunds, democratic voting, and open membership were all considered necessary for any emerging cooperative to be successful.

Cooperatives are business operations that attract new custom based on the competitive products and services they provide; therefore, the first measure of success must be those of business success (Mellor, 2009).

According to Mellor (2009), the main factors for success for cooperatives are:

- A successful business.
- A dedicated set of members.
- An apex organisation to provide economies of scale for services, oversight and rescue of potentially failing primary cooperatives.
- A favourable external business environment.

Business and economic factors are crucial for the success of cooperatives. Some indicators that present the business aspects of a cooperative are: business planning; benefits of cooperating; good finance; and a yearly increase in profit (Fulton, 2004). Cooperatives and agribusinesses can improve their probability of success by addressing the key success factors identified in the

literature. Although success is never guaranteed, proper planning, financing, and education can improve the odds in the business' favour (Bruynis et al., 2001).

3.4.2 Challenges in cooperatives

Cooperatives face new challenges and problems in more complex and competitive environments. Some of the challenges and problems that traditional cooperatives have faced include difficulties in funding growth from equity capital and raising debt capital, in addition to free rider problems with new members income bundling and an inability to obtain capital gain on the members' shares (Woodford, 2003). Cook (1995) outlines five general problems that cooperatives face:

- Horizon problem: Members pressure to increase current payments, instead of making further investment in the cooperative's future development and, thus, the cooperative becomes non-competitive over time.
- Portfolio problem: Members lose confidence in their belief that the cooperative was the best way for their personal investment.
- Internal free-rider problem: Members who made only a small capital investment in the cooperative gain a similar return to the major investment members.
- Control problems: Normally caused by incomplete information being given out and, therefore, misunderstandings occurring between members and governing boards and management, especially those cooperatives which have increased in size.
- Influence on costs problem: These arise when a cooperative decision affect individual members' own interests. Within the cooperative, conflicts between members relationships, members interests, ownership, the manner in which decisions are made and surplus distribution, are all problems influenced by a cooperative's development (Cook, 1995).

The problems related to the division of control and ownership of a firm is particularly seen in cooperatives. The multiple interpretation of ambiguous defined property rights lead to conflicts over residual claims and decision control, especially as these organisations evolve increasing complexity in organisation structure (Nilsson, 2001).

In cooperatives, the ambiguous definition of property rights has created low incentives to exercise control, leading to low investment (Vitalino, 1983) and difficulties in attracting more equity capital from their members (Cook, 1995). The vagueness in the definition of property

rights may create different incentives to control agents (Chaddad & Cook, 2004) therefore, the complication of transferring shares may lead to a stronger motive by the cooperative members to control managers. In capitalist firms, a stockholder that does not like how the firm is managed can freely sell his stocks. However, this option is more complicated in cooperatives, and this fact may drive to cooperative members to get involved on exerting control (Orellana & Rueda, 2004).

Cooperative property rights are not well suited or enforced to ensure that current member patrons, carry the full costs of their actions and or receive the full benefits they deserve. This situation occurs particularly in open membership cooperatives. An example would be when new members obtain the same patronage and residual rights as existing members and are entitled to the same payment per unit of patronage. This set of equally distributed rights combines with lack of market to establish a price for residual claims reflecting accrued and present equivalent of future earnings potential, creating an intergenerational conflict. Because of the dilution of the rate of return to existing members, a disincentive is created to invest in their cooperative (Cook & Iliopoulos, 2000).

The agency theory relates to the way the owners, as residual right holders, can prevent the other stakeholder from being dishonest (Nilsson, 2001). The agent problem emerges mainly in organisations with a separation between ownership and management. It happens when the actions of the managers affect their wealth (Fama & Jensen, 1983).

Cooperatives have been accused by some economists of being an inefficient way to do business, based on the agency and property rights theory. The ambiguous definition of property rights limits the owner-members from controlling and monitoring the organisation. For this reason, several problems emerge such as: the horizon problem; the common property problem; the decision-maker problem; the follow-up problem; and the portfolio problem (Nilsson, 2001).

Additional problems with cooperatives also exist. These include: members' multiple objectives for the cooperative; decision making processes; and issues relating to weak incentives to perform, control of power, under and over investment, unbalanced portfolio, as well as member moral hazards, limited pool of director skills and knowledge (Baldwin, 2001). Sexton & Iskow (1998) add to this saying even if cooperatives are born of a necessity they may fail if they lack

sufficient membership and volume, are improperly financed or are poorly managed. They state that the two most serious causes of failure among cooperatives are insufficient membership and, hence, insufficient business volume and equity financing.

The conversion of cooperatives, known as demutualisation, refers to changes in the ownership structure of user-owned and controlled organisations from a cooperative to a for-profit, proprietary organisation. As a result of demutualisation, residual claim and control rights are reassigned among the firm's stakeholders with implications for firm behaviour and performance (Chaddad & Cook, 2004). In particular, cooperative membership rights are converted to unrestricted common stock ownership rights in a corporate organisation. Demutualisation is usually followed by public listing, which allows the converting firm to acquire additional risk capital from investors (Chaddad & Cook, 2004). As an example of demutualisation, Diamond Foods converted from a cooperative to a stockholder-owned corporation publicly traded.

In a case study, Bell and Sherman (2009) explained how Diamond Foods, by the 2000s, was a good cooperative facing the limitation of capital structure, with a lack of financial resources to properly invest in future growth. Diamond Foods had an increasing disconnect between the need to invest to increase the value of the enterprise and the short term economic interest of the growers as a result of the cooperative model. The members with no form of ownership to allow them to monetise the increased value of the business were mainly focused on getting the highest price for walnuts in the short term, reducing or eliminating their required capital outlay (Bell & Shelman, 2009).

Bell and Sherman (2009) present how the new structure leveraged the untapped equity in the company to raise much needed capital and issue shares to growers, creating a windfall in the realisation of value for the owners. The conversion allowed every grower to accept stock or to elect to receive the cash value of their equity at the time of the conversion to accommodate their individual needs. The benefits were access to capital and creation of value through the issuance of stock that could generate dividends. In 2005, the conversion allowed the company to upsize the offering and issue the growers 13.5% more shares than projected and pricing the shares above the expected range. In this case study, Bell and Sherman (2009) showed how the cooperative structure was a limitation for the success of the organisation.

Oftentimes, cooperatives have to face challenging and poor enabling environments caused by restrictive legislation or in some cases the nonexistence of a cooperative law. Cooperatives need regulation in order to function properly, protect the democratic member control and ownership, autonomy and voluntary and open membership (ICA, 2014a).

The issues and problems of cooperatives are universal, the needs for change are different just because of local regulations, laws and market anomalies (Cook, 1995).

3.4.3 Measuring success in cooperatives

The performance and success of cooperatives has been often measured in a financial way; therefore, quantitative data analysis has been mainly used to measure the success of cooperative performance (Kalogeras, Pennings, Benos, & Doumpos, 2013). However, this method does not consider qualitative parameters, measuring member satisfaction or taking into account the extended strategies of a cooperative. Cooperatives may implement strategies that do not take into account financial parameters in the short term, and this, thus, may impact on their actual financial numbers (Kalogeras et al., 2013). Business success is important, but it is not the only measure of success. The membership participation and governance are clear indicators of a cooperative's long-term business success, as well as how it meets social objectives (Mellor, 2009).

The performance of cooperatives can be measured with a variety of performance indicators. They could be related to the price paid by the patrons of the cooperative, or the cost reduction facilitated by the cooperative. However, the most common way to measure the performance of cooperatives is still return on equity and return on assets (Challita et al., 2014).

According to (Banaszak, 2008), to measure the success of cooperatives is: "being able to coordinate the exchange between farmers and purchasers and additionally to operate at per unit costs, which do not exceed per the unit costs of organising the transaction through alternative ways" (p.35). This comprehension of success could be measured by either knowing whether the gains of the cooperatives' functioning are higher than its costs or by knowing the price premium that the cooperatives negotiate for the members' product.

The evaluation of the success of cooperatives must not be limited to a simple analysis of traditional financial ratios, such as solvency, efficiency, liquidity and profitability (Hind, 1998). Cooperatives should give priority to maximise the satisfaction of the needs of their members, by offering a list of services that can create a state of well-being for their associates, reflecting criteria of success that go beyond simply optimising profitability (Michelsen, 1994). Members' satisfaction with their cooperative is being increasingly used by researchers as a measure of the success or performance of such organisations (Hansen, Jr, & Batista, 2002). Satisfaction influences the desire to continue as a cooperative member and, thus, the survival of the cooperative as a functioning organisation (Hernandez, Arcas, & Marcos, 2013). Members may play several roles in their relationship with the cooperative, and therefore have different interests or goals (Nilsson, 1996).

Member satisfaction from belonging to a cooperative is an appropriate measure of the success of the member-cooperative relationship, supporting the aim of members to stay in the cooperative and, hence, the success of the cooperative. The interest in maintaining a relationship and satisfaction are significant in the maintenance of a positive relationship (Hernandez, Arcas, et al., 2013).

3.4.4 Member satisfaction

The key objective of a cooperative is to provide an economic benefit for members (Barton, 1989). One way of doing this is the maximisation of the average price which is done by distributing all the earnings back to members. This generates positive member perception therefore increasing satisfaction with the cooperative and, in turn, maintaining interest to remain as member (Hernandez, Arcas, et al., 2013).

The working partnership between a member and his cooperative generates satisfaction (Poppo & Zenger, 2002). Satisfaction is not only a close proxy for concepts such as perceived effectiveness but also a predictor of future actions by the cooperative members (Hernandez, Arcas, et al., 2013). A definition of satisfaction in business relationships provided by (Anderson & Narus, 1984) states: "a member's satisfaction with the cooperative is a positive affective state resulting from the appraisal of all aspects of the relationship with the cooperative".

Cooperatives are created to serve members and operate for their benefit (Ortmann & King, 2007). From the perspective of agency theory, members will be satisfied with their cooperative when the cooperative is perceived to act in their interests. In cooperatives, as members could have conflicting goals, invest large amounts of resources and are heterogeneous and numerous, there is a potential for high transaction costs (Nilsson, 1996). It is perceived that transaction costs incur in the relationship with cooperatives determining satisfaction and member intention to remain (Hernandez, Arcas, et al., 2013).

The most obvious reason why farmers join cooperatives is to satisfy their economic goals. However, in addition to this goal, some members may also seek to satisfy social goals through their cooperative membership (Hansen et al., 2002). Economic objectives are related, among other things, to obtaining higher prices for products, or receiving high quality services (Ortmann & King, 2007). Social goals may include the desire to interact with other members and develop personal relationships (Hansen et al., 2002).

Degree of member satisfaction with cooperatives may be related to the organisation as well as to the business (Nilsson, Kihlen, & Norell, 2009). Satisfaction with the cooperative might be related to how members are satisfied with the information they obtain and the way they are treated by the cooperative. However, satisfaction with the business relates to satisfaction levels with the services and the prices offered by the cooperative. Parties who are satisfied with a relationship will be more interested in maintaining it than in starting a new relationship, given the uncertainty that any new relationship may present (Ramsey & Sohi, 1997).

The (Arcas, Martin, & Minguez, 2014), study presented the following hypothesis in relation to members' satisfaction:

- Increasing a farmer's satisfaction with the cooperative increases his/her intention to continue his/her membership of the cooperative.
- The more information a member has about his/her agricultural cooperative, the more satisfied he/she will be with it.
- The more control a member has of his/her agricultural cooperative, the more satisfied he/she will be with it.

- The more a member trusts his/her agricultural cooperative, the more satisfied he/she will be with it.

It is to be expected that members that trust their cooperative perceive that the decisions of their cooperative allow them to achieve their objectives. This stimulates members to feel confident and satisfied with the cooperative. The future of agricultural cooperatives depends on their capacity of satisfying and maintaining their base of farmer members (Hernandez, Arcas, et al., 2013).

3.5 Summary of Literature Review

Cooperatives and rural institutions are contributing to food security by promoting smallholders to access information, services and tools needed. This enables them to produce more food, market their products and generate jobs, thereby, accomplishing better lives and increasing food security globally. Cooperatives are able to overcome challenges by providing their members with useful services. These services go from information, natural resources, technology, communication, training and facilitating their presence in the decision making process (FAO, 2012).

Cooperatives provide smallholders skills that are key factors for their successful development. They provide valuable knowledge and information, making them innovate and adapt to a changing market. Some allow smallholders to build their capacity to analyse their productive systems, identify problems, attempt solutions and adopt technologies and practices more suited to their operation (FAO, 2012).

The success of agricultural cooperatives is influenced by many factors, including political, economic, social, management and governance factors. As an organisation working with people, factors like: leadership and management, membership, communication, benefits and external factors are key for cooperative success.

3.5.1 Leadership and management

The strength of a leader contributes to savings related to internal transactions and coordination costs and, thus, is expected to have a positive impact on success (Banaszak, 2008). A strong central coordinator enables the group to save on both total transaction information transmission and decision-making costs (Williamson, 1983). In coordination processes, leadership as a form of hierarchy, helps to coordinate member actions, and, therefore, lowers bargaining costs that players would have to spend to agree on implementing the strategies (Miller, 1992).

Leadership with vision, transparency, honesty and fairness, a good understanding of technology, business and marketing capacity, increases the unity of members and further leads to successful cooperatives (Liu, 2010). Therefore, the strength of leadership is to include its vision, spirit and time commitment to an organisation and its honest and open communication is a key factor for success (Johnson, 1995). However, an overly strong and dominant leader reduces the likelihood of success (Banaszak, 2008).

Efficient financial management adds to the success of a cooperative (Liu, 2010). Securing sufficient equity before start up, maintaining an adequate business volume, and keeping and distributing accurate financial records have often been associated with success (Bruynis et al., 2001).

Management determines how successful the cooperative performs as a business enterprise (Sexton & Iskow, 1988). The continued management training for both the board and manager also has a positive impact on the likelihood of successful cooperatives (Bruynis et al., 2001). A study done by Sexton and Iskow (1988) found the presence of full time professional managers to be one of the most significant predictors of success. In addition, the integration of young people into cooperatives and developing their leadership and management skills is essential for their success (Mellor, 2009).

According to Sexton and Iskow (1988), the simplest way to achieve good management is to hire professionals with specific expertise, if possible, in relevant industry. Therefore, business acquaintances and efficient management adds to the success of a cooperative (Bruynis et al., 2001).

3.5.2 Membership

The awareness, willingness for participation, knowledge and skills of members relating to the industry are fundamental for successful cooperatives (Liu, 2010). A study done by Sexton and Iskow (1988) found that factors such as open membership and accepting non-member business on cooperatives are correlated with self-understood success. Selection of members that have a previous business relationship between them is also expected to have a positive impact (Banaszak, 2008).

Traditional cooperatives have had a history of open membership; however cooperatives normally have a legal right to restrict membership, with there being no reason not to use membership policy as a tool to increase the cooperative's chances for success (Sexton & Iskow, 1988). Moreover, previous cooperative experience has a positive impact on the likelihood of successful cooperatives (Bruynis et al., 2001). The selection of members is based on previous experience in market relationships, on previous hybrid arrangements, and/or on reputation (Menard, 2006).

It is to be expected that members that trust their cooperative perceive that the decisions of their cooperative allow them to achieve their objectives, therefore, stimulating members to feel confident and satisfied with the cooperative (Arcas & Hernandez, 2003). Trust is a mechanism in agricultural cooperatives than mitigates agency problems (Borgen, 2001). In cooperatives, the trust of members in their cooperative may be defined as the members' belief that their cooperative takes decisions and adopts behaviour that allows them to reach their goals (Arcas & Hernandez, 2003).

Nilsson et al. (2009) states that trust is essential in a cooperative by reducing behavioural uncertainty; it functions to the extent that it can act as a control mechanism that reduces the opportunistic behaviour of managers. Therefore, the more members trust cooperatives, the greater their satisfaction will be (Arcas & Hernandez, 2003).

Hansmann (1996) argues that member homogeneity of any kind implies that members will have more common interests, an essential factor for successful cooperation. Opposing interests between members and engagement in internal lobbying to promote selfish interests increase influence costs in a cooperative organisation (Borgen, 2004).

The number of members has an indeterminate impact on the likelihood of achieving success (Banaszak, 2008). The more members cooperatives attract, the greater the output level and the ability to capture economies of size (Sexton & Iskow, 1988). According to Menard (2006), the level of transaction costs can decrease with an increase in the frequency of transactions; the more frequently transactions take place, the lower the fixed cost per unit.

For many types of cooperatives, there are advantages in membership growth. Growth in membership indicates that the cooperative' successful business reputation is growing and it is considered able to provide desirable services on a competitive basis. More members also mean

more business, distributing overheads more widely, increasing competitiveness and benefits to members (Mellor, 2009).

Greater membership and sales volume also enhances the reliability of the product flow. Reliability of supply is a critical factor in establishing a marketing network; therefore, buyers prefer reliable suppliers and pay them premium prices (Sexton & Iskow, 1988). It follows that the number, identity and selection of members are key elements for the success of cooperatives.

3.5.3 Communication

Effective communication allows group members to make explicit commitments and promises relating to future moves while also exerting a level of moral pressure, appealing for the group to do the "right" or "proper" thing. Communication could also increase the observability of others' actions and decrease the attractiveness of cheating (Banaszak, 2008).

Liu (2010) notes that communication between members and management is important for the successful development of cooperatives. Members that have information about the cooperative and mechanisms of control may prevent opportunistic behaviour of members of the board of directors and professional managers, encouraging the meeting of cooperative shared objectives (Arcas et al., 2014).

Cooperative management have information which members do not have; for example, information about market prices and client behaviour (Borgen, 2001). Nilsson et al., (2009) argue that as a cooperative becomes larger and develops complex business operations, members are no longer able to control the organisation and have difficulty keeping themselves informed about the business and assessing what is happening in the firm. This obstructs the participation of the partners in the governance of the cooperative creating dissatisfaction.

The more information and control a member has about his cooperative, the more satisfied the member is (Arcas et al., 2014). Communication among members is expected to have a positive impact on the likelihood of success (Banaszak, 2008). Therefore, positive communication

between members and with the cooperative is expected to have a positive impact on the likelihood of achieving success.

3.5.4 Benefits

A cooperative is not created only for profit but rather to also assist in members getting other benefits, as well as satisfying interests and meeting alternative objectives (ICA, 2014a). Although the intention of a cooperative is to make a profit for its members, cooperatives also have non-economic objectives. Cooperatives are not only focused on short term goals relating to maximising profits, but are also engaged in the long term goals of creating sustainable economic growth and social development (ICA, 2014a).

According to Barton (1989), the main objective of a cooperative is to create an environment where members benefit economically (Barton, 1989). The maximisation of the average price is one of the main objectives for cooperatives to maximise the benefits of its members. This is done by distributing all the earnings back to members (Hernandez, Arcas, et al., 2013).

Training for members on both technical and cooperative knowledge is a benefit that leads cooperatives to develop successfully (Liu, 2010). Also, according to Sexton and Iskow (1988), since cooperatives are voluntary organisations, they will only succeed if they provide benefits to their members in excess of what is available elsewhere; cooperatives must be born of necessity and membership in a cooperative may provide intangible benefits such as satisfaction from participation in a democratic organisation. Satisfaction influences the desire to continue as a cooperative member and thus the survival and success of the cooperative as a functioning organisation (Hernandez, Arcas, et al., 2013).

3.5.5 External factors

External factors such as the political and legal environment, the market and government policies affect the success of cooperatives. Political factors which influence the success or failure of a cooperative refer to the legal environment and government policies related to the development of the cooperative (FAO, 2012).

Historically, government policies have had an important effect on the prosperity and structure of agriculture cooperatives (Sargent, 1982). Favourable polices and legislation is fundamental for successful cooperative establishment and development (Liu, 2010).

Governments have the potential to accelerate the pace of cooperative development. Successful cooperatives require organisational structure and services beyond the primary cooperative. Primary cooperatives are the initial unit made up of local members and designed to meet their specific needs (Mellor, 2009).

Oftentimes, cooperatives have to face challenging and poor enabling environments caused by restrictive legislation or, in some cases, the nonexistence of a cooperative law. Thus, cooperative laws have a significant role in the promotion and fostering of cooperative development in each country (FAO, 2012). Cooperatives need regulation in order to function properly, protect the democratic membership control and ownership, autonomy and the nature of voluntary and open membership (ICA, 2014a).

Finally, in order to succeed, cooperatives have to face challenges and problems beyond and within their own organisation. External problems include market changes and financial crisis whilst the internal problems include lack of capital and increasing demands from members. Therefore, in order to enable cooperatives to succeed, these organisations have to adapt to the external implications and environment, and at the same time maintain their cooperative principles and features.

Chapter 4

4 Methodology

This research aims to identify key factors that influence the success of farmer cooperatives in Jalisco, Mexico. An extensive review of cooperative literature was undertaken in order to develop a framework to understand key factors that influence the success of cooperatives. The following section outlines the different aspects of the methodology used in this study.

4.1 Research design

The research design combines qualitative and quantitative data as mixed methods. The combination of these research methods has developed into a multidisciplinary field of inquiry (Tashakkori & Creswell, 2007). Researcher use of mixed methods to address complex research questions across diverse disciplines is growing in prevalence and acceptance (Plano Clark, Garrett, & Leslie-Pelecky, 2010). A mixed method design entails the use of the qualitative method to describe experiences with an additional quantitative strategy to measure some dimension of the experience. Measuring a dimension of experience enriches the qualitative description of the phenomenon under investigation (Morse & Niehaus, 2009).

A mixed method design, if conducted with deliberate care, is a stronger design than one that uses a single method because the supplemental component enhances validity of the project per se, by enriching or expanding the understanding or by verifying the results from another perspective (Morse & Niehaus, 2009).

There are many possible approaches for integrating qualitative and quantitative data, and researchers often choose a strategy that fits the relative timing of the collection of the two data sets. The most straightforward strategy for merging quantitative and qualitative data is to present and interpret the two sets of results in the conclusion section of a manuscript (Creswell & Clark, 2007).

4.2 Site selection

Los Altos, Jalisco was selected as the study site for the purpose of the research. Jalisco is the biggest producer of milk in Mexico, offering 19% of total milk production (SAGARPA, 2014). The main dairy region of Jalisco is Los Altos; this region is north-east of the city of Guadalajara

and provides approximately 12% of the total Mexican dairy supply (Wattiaux et al., 2012). In this particular region, there are more than 20 farmer cooperatives with approximately 4000 members (Olmos et al., 2015). The development of cooperatives in this location makes it relevant to study factors that influence the success of farmer cooperatives. In order to gain a deeper understanding of these factors, three cooperatives were studied.

The three cooperatives studied were: Pedro Ezqueda with a sample of 32 participants; Nutrimentos with 16 participants; and Prolea with a sample of 40 participants. The process of selection happened by first visiting the plants and facilities of eight cooperatives belonging to the Union of Consumer Cooperatives from Los Altos (UCCA). The eight cooperatives visited were recommended by the UCCA and from there, selection of three cooperatives that have been successful in the region was made. During the visit, managers and members were interviewed, and information relating grain purchase over the last five years was provided by the UCCA.

Pedro Ezqueda, Nutrimentos and Prolea were chosen as they have been successful in the state of Jalisco. The main elements of success used for selection were membership growth, longevity and volume of grain purchased from UCCA in 2015.

These cooperatives have been operating for many years and have seen growth in membership. Pedro Ezqueda grew from 25 to 423 members in 22 years, Nutrimentos grew from 145 to 166 members in 34 years and Prolea grew from 44 to 575 members in 24 years. These cooperatives were also the top three consumers of grain from UCCA in 2015.

4.3 Qualitative data

The qualitative data in the study was obtained by semi-structured interviews and secondary data to describe the three cooperatives studied. In a semi-structured interview, the interviewer asks precise questions, somewhat reducing the amount of freedom enjoyed by the respondents but still allows them considerable leeway (Gagnon, 2010). The interviewer asks open-ended questions with structured content and the questions are based on certain typical themes drawn from the research protocol (Gagnon, 2010).

Face to face interview is the main technique used for the investigation of personal perspectives and also in-depth understanding of the personal context can be gained using this method

(Ritchie, Lewis, McNaughton Nicholls, & Ormston, 2014). Face to face interviews provide the opportunity to create rapport and to collect both verbal and nonverbal data, considering issues of access, space, privacy and comfort can help the interview go smoothly (Tracy, 2013). For these reasons, face to face semi-structured interviews were selected with the purpose of getting a better understanding of factors that influence the success of farmer cooperatives in Jalisco.

Some qualitative studies on agricultural cooperatives include: factors for successful development of farmer cooperatives in China, where Liu (2010) studied two farmer cooperatives using a case study approach. In Malawi, Towera (2011) explored problems affecting agricultural cooperatives. A multiple case study was used to investigate factors that contribute to the unsuccessful performance of agricultural cooperatives in that context. In Chiapas, Mexico, using a qualitative study, Milford (2014) investigated the reasons different producers make different choices, looking at both material and immaterial costs and benefits of the two choices. Milford found that the main reason for not choosing cooperatives is the production requirements that follow organic certification.

4.3.1 Sampling

When there are too many potential participants, or when the social setting under observation is so complex that continuous observation of all the events, activities or sites is not possible, it is necessary to select a sample from which to collect data (Gagnon, 2010).

A purposive sampling technique was used to select experts, managers, directors and leaders of cooperative associations. Participants were selected based on their involvement, knowledge and experience with cooperatives. A total of 12 individuals participated in the semi-structured interviews.

Local experts, leaders of cooperatives, managers, leaders of cooperative associations and other key players of cooperatives were interviewed face to face. The intention of these interviews was to describe the cooperatives and gain an understaing of their involvment in cooperative activities, identifying what have been the key factors for success and the main challenges facing cooperatives. They were selected based on observations, information available, recommendations from the cooperative association and local experts.

4.3.2 Data collection

The data collection was carried out between August and September, 2015. The data was collected from primary and secondary sources. Primary data was obtained from semi-structured interviews with experts, managers, directors, leaders of cooperative associations and other key players. Before going to Mexico, contact was made with academics, consultants and people from the cooperatives.

The secondary data includes publicly available information such as documentation, academic journals, company reports, newspapers and web sites. The study examines contemporary events so this type of data collection is appropriate for obtaining this kind of information. Documentation includes letters, press releases, media publications and other written material that may not necessarily be precise or free of bias but still serve to corroborate information from other sources (Yin, 2002).

Interviews conducted in Spanish were recorded, fully translated and transcribed. The translation from Spanish to English of the interviews may have affected the interviewees' original meaning, limiting the quality of the analysis of the information.

4.3.3 Qualitative data analysis

Following the Yin (2002) method of qualitative data analysis, examining, categorising and tabulating was used to address the qualitative data. The data coding and classification process consists of identifying and coding passages in the texts that describe or relate to categories or concepts connected to the phenomenon of interest (Gagnon, 2010). It is then possible to classify the data, grouping together items that belong to the same category. The challenge is to adapt a coding/classification method in order to record, connect, explore, test and cumulatively build up the information that is extracted from the data (Gagnon, 2010). The researcher weaves together the ideas, concepts and categories that emerge from the evidence in order to generate results (Gagnon, 2010). The data was organised and classified to make it easier to analyse. Information then was coded and analysed to identify key factors and conceptual categories.

4.4 Quantitative data

A cross-sectional research design was selected for the investigation of the perception of members. This design employs the technique of social survey, using structured interviews with members of cooperatives as the data collection strategy (Banaszak, 2008). The survey design is

an appropriate study design used in social sciences to gather random data from a large population (Philliber, Schwab, & Sloss, 1980).

Yin (2002) suggests that the degree of focus on contemporary, as opposed to historical, events is another important factor when considering study designs. In this regard, this research aims to capture factors that influence cooperative success at the time of the survey. According to Yin (2002), survey studies are appropriate when the focus of the research is on contemporary events. Since the main focus of the research is to explore factors that influence the success of farmer cooperatives, it was considered that a survey study design with structured interviews did comply with the requirement Yin described.

The structured interviews occurred in a face to face setting. Face to face interviews are structured, flexible and adaptable. They are based on personal interaction and can be controlled within the environment. On the other hand, there are also some disadvantages, such as interviewer bias, high cost per respondent, geographical limitation and time pressure on respondents (Alreck & Settle, 2004).

Examples of quantitative studies on agricultural cooperatives include Bruynis' (2001) analysis of 27 variables as factors for success in the US; Banaszak (2008) studying several variables to measure the success of agricultural cooperatives in Poland; the survey of 2250 Swedish farmers to find factors that influenced successful farmer cooperatives in Sweden (Ostenberg & Nilsson, 2009).

4.4.1 Sampling

A convenience sampling technique was used to obtain the participants for the quantitative structured interviews. Convenience sampling is a statistical method of drawing representative data by selecting people because of the ease of their volunteering or availability or easy access. In convenience sampling, the researcher uses a total sample (all those who are present). Convenience sampling is also used because it is easy and relatively inexpensive to access (Tracy, 2013). The advantages of this type of sampling are the availability and the speed with which data can be gathered. The disadvantages are the risk that the sample might not represent the population as a whole and might be biased by volunteers. A convenience sample is most appropriate when the priorities are speed and low cost (Morse & Niehaus, 2009).

4.4.2 Questionnaire design

Based on the objectives set by this research, an extensive literature review on key factors influencing cooperative success highlighted several categories to measure.

The success of farmer cooperatives is influenced by political, economic, social, management and governance factors. The most relevant categories for survey according to the literature review were: leadership and management; membership; communication; benefits; and external factors. Questions relevant to the profile of the members were also elaborated.

4.4.3 Data collection

The structured interviews were obtained by visiting the plants of the three cooperatives (Pedro Ezqueda, Nutrimentos and Prolea) and members were interviewed face to face at the location. In Pedro Ezqueda, 32 participants were interviewed, in Nutrimentos 16 participants and at the final cooperative, Prolea, there were 40 participants.

The primary data was obtained from structured interviews with members and a total of 88 members participated in the structured interviews.

4.4.4 Pre-test of the structured interviews

A pilot test of the structured interviews was undertaken with five members of farmer cooperatives before starting the data collection. The objective of the pilot study was to ask members about their understanding of the questions, time of completion and layout.

4.4.5 Quantitative analysis

For the analysis of the quantitative data, exploratory descriptive statistical analysis on all variables was implemented to explore the nature of the data and describe the sample.

4.4.5.1 Coefficient of variation

A coefficient of variation was obtained for all the factors measured. The factors were listed and ranked based on their coefficient of variation. The coefficient of variation is a measure of spread that describes the amount of variability relative to the mean (Minitab, 2015). It is the standard deviation expressed as a percentage of the mean and it is a dimensionless quantity which can be used for comparing relative amounts of variation (Petrie & Watson, 2013). This indicator

presents the level of perception of the participants for each factor. The lower value indicates stronger perception for that factor.

4.4.5.2 Cluster analysis and ANOVA

Three cluster analyses were elaborated for any statistical significant difference between the means of each category (leadership and management, membership, communication, benefits and external factors) in different clusters. The data was analysed in three groups: level of milk production; level of education; and cooperatives.

A one-way analysis of variance (ANOVA) was implemented to analyse the difference between means for the different groups. This analysis determines whether the means of two or more groups differ (Minitab, 2010). ANOVA is a powerful collection of parametric statistical procedures for the analysis of data, essentially comparing the means of various groups of data (Petrie & Watson, 2013).

The first cluster analysis was done with two groups: high level of production per cow and low level of production per cow. High level of production was considered above the mean of production (20 lts/cow/day) and below this figure was considered low level.

For the second cluster analysis the data was grouped by level of education, including: none, elementary, secondary, high school, university and post grad. The third and final cluster analysis was grouped by cooperative, including: Pedro Ezqueda, Nutrimentos and Prolea.

Software programmes, SAS and Minitab, were used to perform the statistical analyses and graphs.

4.4.5.3 Principal component analysis

A principal component analysis (PCA) was implemented to explain the variance-covariance structure of the set of factors for success. The central idea of PCA is to reduce the dimensionality of a data set consisting of a large number of interrelated variables, while retaining as much as possible of the variation present in the data set (Jolliffe, 2002). This is achieved by transforming to a new set of variables, the principal components (PCs), these PCs are new non observed

variables that capture the most variance of the data observed in the original items (Jolliffe, 2002; Meyers, Gamst & Guarino, 2006).

The numbers resulting from the PCA was determined by the eigenvalues of each PC. Eigenvalues show the amount of variance captured by each PC and can vary from 0 to any positive value. The greater the eigenvalue, the greater the variance explained by the PC. In contrast, it is assumed that PCs with eigenvalues close to 0 do not explain much of the variance items responses and, therefore, is sensible to not use them in further analysis (Meyers et al., 2006).

Once the number of retained PCs was decided, the interpretation of the underlying structure of each of these PCs was decided, the interpretation of the underlying structure of each of these PCs was addressed based on the component loading resulting from the PCA. Component loadings indicate the strength and direction of the relationship between an item and a principal component (Meyers et al., 2006). Hence, the greater the component loading of an item, the more the item adds to the interpretation of a PC. According to Meyer (2006), component loadings with an absolute value greater than 0.4 are considered to be determined for interpreting their related PC. Strongly related items were useful for interpreting each of the PCs and giving meaning to the factors for success.

Software programmes, SAS and Excel, were used to perform the statistical analyses and graphs.

4.5 Ethical considerations

This project was judged to be low risk according to Massey University Human Ethics standards. Anonymity and confidentiality were assured by keeping survey responses separate from the contact details database. In addition, data was analysed collectively so that no person could be identified from the results of this project.

The WAPOR Code (World Association for Public Opinion Research 2010) defines professional ethics and practices in the field of public opinion research and explain that the standards within it are promulgated in order to:

- Advance the use of science in the field of public opinion research.

- Protect the public from misrepresentation and exploitation in the name of research.
- Maintain confidence that researchers in this field are bound by a set of sound and basic principles (Frechtling & Boo, 2012).

Research ethics are important in this research and precautions were taken to ensure the participants' confidentiality and anonymity when corresponding.

It was made clear to the participants that the collected information would be kept confidential and that individual details would not be revealed at any time.

4.6 Summary

For the purpose of this research, the research design combines qualitative and quantitative data as mixed methods. Primary data was obtained through face to face semi-structured and face to face structured interviews including members, experts, managers, directors, leaders of cooperative associations and other key players in farmer cooperatives.

The qualitative data was obtained by semi-structured interviews with the purpose of describing the cooperatives and getting a better understanding of factors influencing the success of farmer cooperatives in the region of Jalisco. A social survey was selected for the investigation of the perception of members, using structured interviews with members of farmer cooperatives as the data collection strategy. Three cooperatives from Jalisco were studied. They were selected based on observations, information available, recommendations from the cooperative association and local experts.

In order to identify factors influencing the success of farmer cooperatives in the region of Jalisco, the research design combined qualitative and quantitative data as mixed methods. The two sets of results, qualitative and quantitative data, were merged, presented and interpreted in a conclusion.

Ethics was an important concern for this research, especially relating to the confidentiality and privacy of the participants.

Chapter 5

5 Description of the Cooperatives Studied

This chapter describes the cooperatives studied in terms of their establishment, structure, operation and vision, including factors that influence their success. The description was obtained from interviews with experts, managers, directors, leaders of cooperative associations and other key players and provides the view of experts, top management and secondary data.

- Section one is a description of the Union of Consumer Cooperatives from Los Altos (UCCA).
- Section two is a description of the three cooperatives studied (Pedro Ezqueda, Nutrimentos and Prolea).

5.1 Union of Consumer Cooperatives from Los Altos Jalisco (UCCA)

5.1.1 Establishment of UCCA

The UCCA is a cooperative union created in Los Altos, Jalisco in 1995. It was created in order to improve the situation of cooperatives in the region. The cooperative union started with five cooperatives and, through the years, more cooperatives joined the union, totalling 17 cooperatives in 2015. It provides agricultural services, mainly buying grains in volume generating a better price for feeds and concentrates.

"*UCCA started with several cooperatives working together finding success in buying grains in volume and, therefore, getting a better price for concentrate. The objective was to provide a concentrate at a better price and quality. The better price was a challenge because we had to buy grain from a long way away to reduce the cost of the concentrate by 50 %"* (President of UCCA, 2015).

Table 11 Cooperatives of UCCA 2015. Source: (UCCA, 2015)

	Name	Location	Volume of grain purchased (kgs) Jan - Aug 2015	% participation
1	Prolea	Acatic	11,437,974	15.3%
2	Cooperativa de Consumo Pedro Ezqueda	San Juan de los Lagos	10,452,032	14.0%
3	Nutrimentos Agropecuarios de Los Altos	Capilla de Guadalupe	7,415,135	10.0%
4	Agroindustrias Pedro Moreno	Lagos de Moreno	6,851,528	9.2%
5	Union de Porcicultores y Ganaderos de San Julian	San Julian	6,099,459	8.2%
6	Sociedad Cooperativa de Consumo España	Tepatitlan de Morelos	5,335,156	7.2%
7	Cooperativa de Consumo San Miguel Arcangel	San Miguel El Alto	5,046,154	6.8%
8	Sociedad Cooperativa de Consumo Agropecuario Ganaderos y Porcicultores de Pegueros	Pegueros	4,039,838	5.4%
9	Productores y Engordadores de San Jose de Gracia	San Jose de Gracia	3,950,099	5.3%
10	Cooperativa de Consumo Agropecuaria La Macarena	Valle de Guadalupe	3,794,660	5.1%
11	Cooperativa de Consumo San Julio Alvarez	San Diego de Alejandria	3,281,770	4.4%
12	Cooperativa de Productores San Jose de Merino	Pegueros	2,082,294	2.8%
13	Consumidores San Sebastian	San Sebastian	1,786,674	2.4%
14	Cooperativa de Consumo Agropecuaria de Valle de Guadalupe	Valle de Guadalupe	1,417,395	1.9%
15	Sociedad Cooperativa de Consumo Ganaderos de San Ignacio Cerro Gordo	Tepatitlan de Morelos	760,900	1.0%
16	Productores Unidos de La Purisima	La Purísima Mpio de Zapotlanejo	518,020	0.7%
17	Union de Consumidores Juan Pablo Segundo	San Juan de los Lagos	247,530	0.3%
	UCCA total		74,516,618	100%

5.1.2 Governance and management

The governance structure of the cooperative union is in accordance with the 1994 GLCS and includes a general assembly, board of directors and supervisory committee who are in charge of the direction, management and surveillance of the cooperative union.

The general assembly resolves all the business and important issues for the cooperative union and establishes the general rules. The general assembly includes leaders and presidents from each of the 17 cooperatives that form the UCCA.

The scope of the general assembly also includes:

- Modifications to the constitution of UCCA.
- Approval for systems and plans for production, work, distribution, sales and financing.
- Designation and removal of members from the board and supervisory committee, special committees and specialists hired.
- Examines the internal accounting system.
- Application of penalties to cooperative members.
- Distribution of returns and surplus.
- Approval of proposed ecological measures.

The board is the executive arm of the general assembly and represents the cooperative union; it has the right to designate one or more managers in charge of certain responsibility and also one or more commissioners in charge of managing special sections. The board is made up of directors who are members of the cooperatives from the union.

The supervisory committee supervises all the activities of the union. The main role of the supervisory committee is to monitor the board and management with particular focus on internal auditing. This committee is formed by three elected members from the membership base.

"*The supervisory committee is here to verify the board's work, mainly accounting and finance. It has the responsibility to make sure the board works in favour of their members*" (General Manager of UCCA, 2015).

The union has an employed team formed by a general manager, technical department, administration department and production department. This management team is in charge of the

cooperative union as a business, ensuring that decisions made by the board are executed, achieving the cooperative's annual business plan and managing the daily operation of the cooperative union.

5.1.3 Membership

UCCA represents 17 cooperatives distributed in Los Altos, Jalisco. This cooperative union has the mission of satisfying the needs of the cooperatives ensuring quality, the best price for grains and profitability.

A UCCA consultant stated: "*members of the UCCA cooperatives are similar and homogenous with most of them dedicated to dairy production, from the same region, so, therefore, having several needs in common".*

The requirements for a cooperative to join the UCCA are: a contribution of 5000 pesos (300 USD); approval from the general assembly; and to purchase without credit during the first six months.

UCCA charges 1 cent for every kg of concentrate sold. During the initiation of UCCA, an extra cent was charged to help fund the cooperative union. Once UCCA was funded and able to operate, a title of contribution was given for the total contribution of the extra cent charged.

Cooperatives as members will be excluded if they:

- Repeatedly fail to meet the obligations established in the constitution, without justification.
- Repeatedly break the law, cooperative rules, general assembly resolutions or agreements from the board, managers or commissioners.

Cooperatives under the process of exclusion will be notified, explaining the reasons for the decision.

The General Manager of the Council for the Promotion of Quality of Dairy Products (COFOCALEC) stated: *"Members of UCCA have not entirely used the cooperative force to improve their channels of commercialisation or add value to their products. Members of farmer cooperatives in Jalisco are individualistic, showing a lack of trust between them and this is one of the main obstacles to working collectively*".

5.1.4 Operation and services

The main supply that cooperative members need is feed concentrate. UCCA has been able to increase its purchasing power by buying grains for all the cooperatives from the union, avoiding intermediaries and decreasing their feed costs considerably. UCCA buys more than 91,000 tonnes of grains per year including maize, soybean, canola meal, cotton seed, dry distiller grain, sorghum and other feeds.

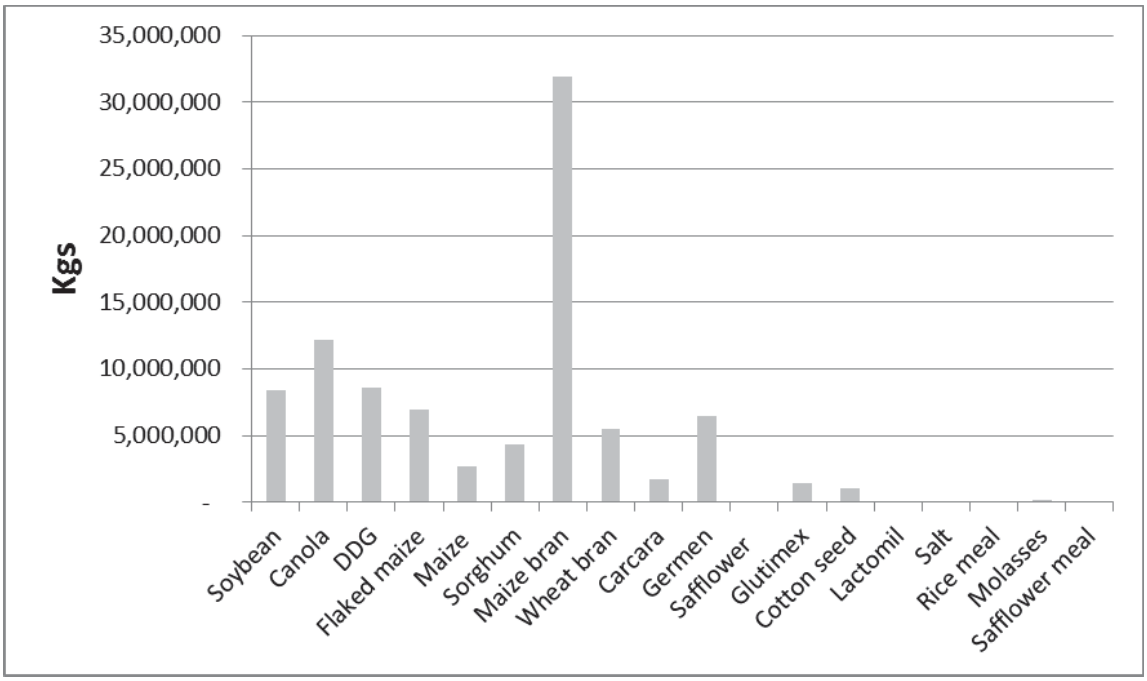

Figure 7 UCCA's grain consumption 2014. Source: (UCCA, 2015)

Canola is imported from Canada, with the process of meal extraction happening in Mexico. Soybean is imported from the United States, also having the process of meal extraction in Mexico. Dry distiller grain is also imported from the United States as well as some of the maize import, with the rest being from Mexico; the origin of the maize import is variable and depends on price and availability. Cotton seed is from United States (80%) and Mexico (20%) also with the rest of the grain purchased from Mexico. Overall, approximately 30% of all grain purchased is imported (UCCA, 2015).

UCCA not only buys supplies and input as raw material, but also has a plant of mineral premixes. They have received support from the government (SEDEA) with several projects including the building of a premix plant.

5.1.5 Vision

The UCCA and Prolea president sees the cooperative union as a society with the capacity to grow and develop many of its cooperatives technically and, by extension, their members. He thinks the priority has to be to take the benefit to their cooperatives.

He stated: *"We have advanced really well in the last five years but we still have to work a lot and believe in ourselves. If we all go in the same direction, we will get stronger and that is when we will get the results that we expect. If we go in different directions, we will stay only with the intention. Five years ago, I would have thought that making something different was impossible; today, I see it as more possible".*

"Seventeen cooperatives provide strengths that have to be utilised. We have to believe in ourselves and set the scene. For instance, we have our nutritionist who is young and proactive; little by little, we are getting the right people that we need in order to grow" (President of UCCA, 2015).

According to the UCCA president, the government needs to change its policies in favour of cooperatives and the dairy industry. He believes that the government needs to create an environment more favourable; more jobs need to be created to establish a favourable environment for everyone.

The COFOCALEC general manager stated: *"the dairy industry and farmer cooperatives in Mexico have no real support from the government and there are no public policies that regulate the sector".* A UNAM researcher and consultant agreed saying: "*farmer cooperatives do not have a clear idea of what the government wants for its milk industry and there has not been a clear public policy*". Both experts argued for more support from the government in order to guarantee dairy farmers and farmer cooperatives a sustainable future.

The UNAM researcher and consultant went on to note: "*the government needs to support the development of farmer cooperatives more by finding a proper approach, fostering, guiding and helping cooperatives in order to achieve successful results*".

The UCCA president mentioned that in order to survive, cooperatives have to face challenges and problems beyond and within cooperatives. He reasoned that external problems implicate market changes and financial crisis. In the last four years, there has been volatility with the price of input, especially grains, making the activity of farming challenging. Therefore, these cooperatives have adapted to the external environment and the implications of that and, at the same time, have maintained their cooperative principles and features.

UCCA has the vision to become the number one cooperative union of agricultural services in the west of Mexico.

5.2 The cooperatives studied

The data in this study was obtained by visiting the plants of three different UCCA cooperatives. Pedro Ezqueda, Nutrimentos and Prolea were chosen as they have been successful in the state of Jalisco. The main elements of success used for selection were membership growth, longevity and volume of grain purchased from UCCA in 2015.

These cooperatives have been operating for many years and have seen growth in membership. Pedro Ezqueda grew from 25 to 423 members in 22 years, Nutrimentos grew from 145 to 166 members in 34 years and Prolea grew from 44 to 575 members in 24 years. These cooperatives were also the top three consumers of grain from UCCA in 2015 (table 11).

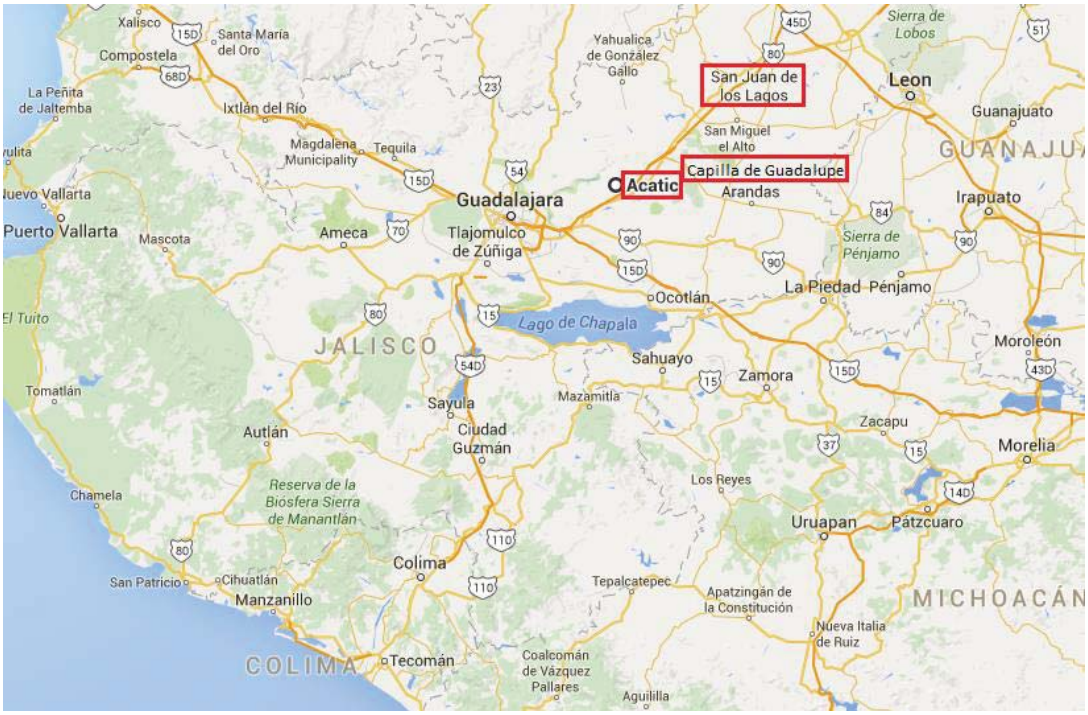

Figure 8 Map of Jalisco. Source: (Google Maps, 2015)

The three cooperatives studied are established as consumer cooperatives. According to the GLCS of 1994, there are only three types of cooperative societies: consumers of goods and/or services; producers of goods and/or services; and savings and credit. Consumer and producer cooperatives are able to be grouped as federations or unions. Federations are able to be grouped as cooperatives of the same economic activity, whereas unions are able to be grouped as cooperatives of different economic activities (DOF, 1994). These three farmer cooperatives are established as consumer cooperatives since they buy their grains in volume, providing lower cost on feed concentrates and other agricultural services to their members.

5.2.1 Cooperative Pedro Ezqueda

5.2.1.1 Establishment

The cooperative Pedro Ezqueda was founded in 1993 with 25 members. It is located in San Juan de los Lagos, a town in the northeast corner of the state of Jalisco, in the region of Los Altos. San Juan de los Lagos is best known as the home of a small image of the Virgin Mary called Our Lady of San Juan de los Lagos.

The priests guided the formation of this cooperative. The clergy influenced dairy farmers to work together to buy farm supplies so as to increase their purchasing power. The church also helped the cooperative with some land and a scale. The main initiators of the cooperative were clergy and the previous president, who held this position for 10 years and was a key leader in the formation of the cooperative, before taking a position on the board of directors.

5.2.1.2 Governance and management

The cooperative is regulated by the GLCS (1994) and also has an internal regulation. It has a general assembly, board of directors and supervisory committee who are in charge of the direction, management and surveillance of the cooperative.

The current president of Pedro Ezqueda has been in the position for one year and according to a cooperative board member is knowledgeable in feed concentrate production and farming but has limited experience leading a cooperative. This board member also noted that even though his experience leading a cooperative is limited, he has been able to show his vision and commitment to members of the cooperative.

"*Some members of Pedro Ezqueda do not have enough trust and confidence in the management and governance of the cooperative mainly because members with higher participation and larger farms take responsibilities as directors, making the policies and being more dominant in the cooperative*" (Board member of Pedro Ezqueda, 2015).

The general assembly engages in all the businesses and important issues relating to the cooperative and establishes the general rules for social performance.

The board of directors is the executive arm of the general assembly and represents the cooperative. The board of directors is composed of eight members of the cooperative and includes a president, secretary, treasurer along with five other board members. The board of directors suggests plans and proposals to the cooperative members at the general assembly. The board usually presents three or more proposals. Any investment below 300 000 pesos can be decided by the president, but anything above that has to pass through the general assembly.

The cooperative has a management team employed which is made up of a general manager, accounting department personnel and an operations department. Management is in charge of the

cooperative as a business, ensuring decisions made by the board are executed, managing the daily operation of the cooperative and achieving the objectives of the cooperative.

A UCCA consultant noted that some members do not entirely trust these managers as agents, considering that they do not understand the needs of members. According to him, these members perceive that they do not look after the benefits relating to members.

The supervisory committee is composed of three members who supervise all the activities of the cooperative. The committee is formed from elected members from the membership base. The main role of the supervisory committee is to monitor the cooperative board of directors and management.

5.2.1.3 Membership

In 2015, the cooperative had 423 members. It has an open membership policy; the requirements to be part of the cooperative are to fill in an application, be recommended by another member, pay a contribution of 10 000 pesos (600 USD) and pay one week of consumption. The cooperative, as the law establishes, does not have shares but rather have contribution certificates. A title is given for the total contribution paid.

The retained earnings at the end of the year and the contributions from members generates equity in the cooperative. At the general assembly, it is decided where the capital is to be invested. In the past, any extra funds have been reinvested into the cooperative infrastructure with no rebates to members given.

The members are obliged to consume or utilise the cooperative. All members of the cooperative have the same rights and it follows a one member one vote system. The general assembly votes for the board of directors and supervisory committee with an annual re-election schedule. The assembly has a participation rate of approximately 90%. When someone wants to leave, the cooperative gives the contributions back and the member is paid off.

The cooperative shares important information with their members with screens at their payment counters showing members relevant information about new plans for the cooperative, results and information about the grain and dairy market.

According to the general manager, the level of trust in the cooperative is good. He stated: *"In general terms, members trust the board and decisions made for the cooperative. The members trust that the cooperative works on providing a product that satisfies their needs, the product that best suits their production levels, producing what members as farmers need".*

"Conflicts and problems have arisen with the cooperative due to some members lacking commitment and interest in participating and being informed about the cooperative. Some members feel that their opinion is not taken into account, having misunderstandings and poor communication with management and governing board. These members feel that the decisions are taken just by a minority group" (Board Member of Pedro Ezqueda, 2015).

Discussing some of the limitations of the cooperative, a board member noted, "*members still have poor understanding of cooperative principles, low levels of education and lack of integration from younger generations*".

5.2.1.4 Operation and services

Pedro Ezqueda buys 11,400 tonnes of grain from the UCCA per year. This represents 14% of UCCA's total purchase, being in 2015 the UCCA's 2nd largest buyer.

The main benefits that the cooperative offers are the quality and price of product. However, there are also scholarships for the members' children, health insurance and consultancy services from a veterinarian and hardware store.

The general manager noted that it has been challenging for most of the cooperatives, including Pedro Ezqueda, to get access and support from government programmes. The UCCA consultant argued that easier and efficient access to government and financial support is an important factor for the development and success of famer cooperatives in Jalisco.

"*Members trust that we are providing a product that satisfies their needs and the product that best suits their production levels, therefore, not producing what we want, but rather producing what members as farmers require*" (General manager of Pedro Ezqueda, 2015).

"*The difference in size of farms has generated diverse needs of benefits and services in terms of level of farm inputs, considering the level of production of cows and the different quality of concentrate some members might need. This has left some members without the benefit or service that really satisfies them*" (Consultant of UCCA, 2015).

The cooperative has tried to offer training events and presentations to their members. According to their general manager, there has been lack of interest and attendance from members. For this reason, they have stopped organising such events.

Every month, there is a meeting where the key indicators are presented, mainly comparing their sales with last year's month. The board and management analyses all the purchases during the month and retained earnings. As an indicator, in December 2014 the cooperative had their highest level of sales in the history of the cooperative.

"We are evaluating our processes to see why things do not happen, why we do not accomplish our objectives. We are working on training more of our employees, and satisfying some needs of the workers, in an effort to try to have a more efficient team. We increased the number of our workers to make things easier. We implemented quality controls, checking the quality of the grains that we buy" (General Manager of Pedro Ezqueda, 2015).

The plant is currently working 12 hours a day with future plans to have it running 16 hours to increase production and keep growing. In terms of volume of production, the cooperative has grown 52% from 2008 to 2015 and their projection is to grow 75% from 2015 to 2022.

"We listen to our members, trying to find out what satisfies them. If the product does not comply with the quality standards, they can return it, helping us improve our process. We make our employees aware of the need to attend to the needs of the owners of the cooperative, the members, providing the best service possible" (General Manager of Pedro Ezqueda, 2015).

5.2.1.5 Vision

In terms of developing the cooperatives in the region, the general manager thinks that it is necessary to attract more leaders with strengths in people organisation as well as bringing more professionals into the cooperative.

One of the main strengths of farmers from the cooperative is their passion for the activity of farming. *"Cooperatives have survived because feed concentrate is vital for milk production. Organisation and love of the animals have been key factors for success. Farmers have a huge passion and love for their activity"* (Pedro Ezqueda board member, 2015).

Because of some difficulties, some members have left the cooperative; these have been mainly due to personal problems with their business and/or problems with the product.

The cooperative board member interviewed considered there was a greater need for societal awareness for the consumption of local milk. He also thinks dairy farmers need to improve their milk quality in order to increase milk sales.

The vision of the cooperative is to be the cooperative leader in the region of Los Altos, Jalisco.

5.2.2 Cooperative Nutrimentos

5.2.2.1 Establishment

The cooperative was created in 1981 with 145 members. The Nutrimentos cooperative is located in Valle de Guadalupe, a town in north east Jalisco in the region of Los Altos. Nutrimentos was established to buy grain in volume, getting better prices while providing good quality concentrates to members.

"We have had great success; at the beginning, there were only feed stores. The cooperative makes more than 20 cents for every kg of feed; without being organised as cooperatives, we would be making only seven cents per kg" (President of Nutrimentos, 2015).

5.2.2.2 Governance and management

The cooperative is regulated by the GLCS (1994). The structure of the cooperative is similar to the rest of the UCCA cooperatives. It has a general assembly, board of directors and supervisory committee who are in charge of the direction, management and surveillance of the cooperative.

The general assembly is the main authority; it engages in all the businesses and important issues relating to the cooperative. The board is the executive arm of the general assembly and represents the cooperative. It is composed of a president, secretary, treasurer and five other board members.

The president, who also has the function of general manager, is in charge of the cooperative as a business; he makes sure that the decisions made by the board are executed, achieving the aims as outlined on the cooperative's annual business plan as well as managing operations. The cooperative has an accounting and production department.

"*The president of Nutrimentos leads his cooperative with strong transparency and honesty, gaining a high level of trust from members. He has been in the position for more than 10 years, showing good capabilities on feed concentrate production and cooperative knowledge, delivering high member satisfaction*" (UCCA Consultant , 2015).

The supervisory committee has three members, who are elected from the membership base, and supervise all the activities of the cooperative. The main role of the supervisory committee is to monitor the board and management.

5.2.2.3 Membership

The cooperative had 166 members in 2015. Legally in cooperative societies, there are no shares, but instead titles, although internally the cooperative uses shares. The 112 existing founder members own 150 shares. Shares have a value of between 60 and 130 titles of 1000 pesos. The most recent 54 members got membership to the cooperative without paying for any titles or shares; they were given one title for free and only participate with their consumption. When capital grows, the number of titles grows according to consumption. Through all the years it has been in existence, there has been no rebates with everything being reinvested into infrastructure. In the case of a member desiring to leave the cooperative, their contribution is paid back and they are paid off.

According to the president, cooperative members participate well in the assembly with general assembly attendance at approximately 80%. He noted that members are informed every month about consumption and financial reports and have an interest in this information.

According to the president, members in general do not have a good understanding on cooperatives. He stated: *"When the cooperative started, a full training programme relating to cooperative organisations was given. Through the years, people might remember probably half of the rules. At the assemblies, there are reminders of the rules."* The president of the

cooperative helps the members with the rules in case any member needs to be advised about the GLCS (1994).

5.2.2.4 Operation and services

The main benefits that the cooperative offer are the quality of the concentrate and consultancy services from a veterinarian. The quality of the concentrate is a benefit that helps maintain good standards of milk production. Nutrimentos buys 7,180 tonnes of grains per year from the UCCA, representing 10% of UCCA's total purchases, being, in 2015, the third largest consumer.

*"The manager must inform their members well about the benefits and find a way that the benefits satisfy the members. This makes members feel and understand the benefits that the cooperative offers and keeps them interested and supportive. When people see that things are going well, they will support the cooperative. When there is no clarity or clear accounting, interest is lost. Transparent work from the manager helps to have support from the members" (*President of Nutrimentos, 2015).

The president of the cooperative mentioned that Nutriments is not offering training as part of the services.

The cooperative has grown 130% in the volume of production since it started. In accounting terms, the cooperative is also growing. Recently a new piece of land of 5000 square meters was bought in order to keep production growing. Another recent improvement project has been the renovation of all vehicles.

"The members are satisfied with the services offered, and we are surviving and succeeding as a functioning organisation. This is achieved mainly by the collective bargaining power of members through the cooperative" (President of Nutrimentos, 2015).

5.2.2.5 Vision

The president thinks that transparency relating to processes has been an important factor of the management of the cooperative. He stated: *"If there is no transparency and clear accounting of the processes, people lose interest; when managers show transparency and clear work, people support him."*

"There are sturdy farmers that have been able to live on very low budgets; they live with less money than a salaried worker, which is the reason why they have been able to survive. Twenty years ago, dairy farming used to be a profitable business in Jalisco; nowadays it has become a more challenging business" (President of Nutrimentos, 2015). According to the president, this ability to live with low budgets has helped these members survive and keep running their farms; members that do not have this ability are the ones that have had to leave their business and the cooperative.

The biggest difficulty noted by the president of Nutrimentos is the low price of milk for farmers and the competition of milk powder coming from the United States. He noted that dairy farmers have to sell their milk at very low prices, between 2 and 3 pesos per litre. This situation has made members leave the cooperative and the activity of farming in general.

The vision of the cooperative is to think of the future of the farmers, according to the president: "*if the cooperative did not exist, famers would not exist either. Without the cooperative, there would not be any profit left. The vision is to keep growing in order to keep surviving".*

5.2.3 Cooperative Prolea

5.2.3.1 Establishment

Prolea is a cooperative formed in 1991 in Acatic, Jalisco. Acatic is a town in Los Altos, north east of Guadalajara. The town produces mainly brick, adobe floor tile, chia, maize and tequila.

"*The cooperative started when the company that bought our milk invited us to participate with them. They needed more milk so they offered us cows and credit, so we imported some cows from Canada. Later on, we thought this was not working that well so we organised a society to collect the milk and distribute our milk in a different way. Some consultant told us that a cooperative was the best way to get organised*" (President of Prolea, 2015).

According to their president, Prolea is an organisation that works for their people; it considers a person to have the same value whether they have many assets or simply just one cow.

"In the region, there was a need to satisfy a necessity to place milk in a better way. We started with 44 members and people little by little found that this was beneficial for everyone and formed a cooperative" (President of Prolea, 2015).

The current president started directing the cooperative in the third year of its establishment. He started promoting approaches to having more services that would benefit members, allowing lower costs of production and better incomes.

5.2.3.2 Governance and management

The cooperative is regulated by the GLCS (1994). The structure of the cooperative has a general assembly and a board and supervisory committee who are in charge of the internal direction, management and surveillance of the cooperative.

According to the COFOCALEC general manager, the Prolea president is one of the main leaders and promoters of cooperatives in Jalisco, saying he has been leading Prolea for more than 27 years and his vision, experience and knowledge have helped Prolea become the largest farmer cooperative in the region.

The general assembly is the main authority; it engages in all the businesses and important issues relating to the cooperative. The board is the executive arm of the general assembly and represents the cooperative. It has a president, secretary, treasurer, committee of accounting, committee of marketing and production, president of cooperative education, president of social welfare, president of conflicts and a supervisory committee. Everyone is a member of the cooperative.

The cooperative has an operational team lead by the general manager. This management team is in charge of the cooperative as a business, ensuring decisions made by the board are executed and thereby accomplishing the cooperative's plans.

The supervisory committee supervises the activities of the cooperative and is composed of elected members from membership base. The main function of the supervisory committee is to audit the cooperative board and management.

"*The leaders of this cooperative have not shown a clear succession plan; they have not worked on ensuring that the coming generation participate more in the cooperative, enhancing their strengths and ensuring success of the future of the cooperative*" (General Manager of COFOCALEC, 2015).

5.2.3.3Membership

In 2015, the cooperative had 575 members. These members need to undertake at least 80% participation in order to retain the status of 'active membership'. They have to either buy concentrate or sell forage; if the member does not participate, he loses his right to vote and his membership. The voting system is one member one vote. Any time it is necessary an assembly is organised.

"Prolea has been able to survive since they have been able to attract enough membership volume to generate enough business volume - mainly on feed production - surviving and maintaining the cooperative operating" (COFOCALEC general manager, 2015). "*The smaller cooperatives in the region fail and struggle, having limited membership volume without generating enough production volume. Despite the fact that, they are born of a necessity - feed concentrate- their scale has limited their development and therefore success"* (UCCA consultant, 2015).

The cooperative does not have shares but rather contributions; however, this is not the main way the cooperative has been funded and grown. The consumption of services, mainly feed concentrates is what has made the cooperative grow in infrastructure. All profit has been reinvested in infrastructure and there have been no rebates.

"We are an open cooperative; it just has to be a farmer and be an acceptable moral person." (President of Prolea, 2015).

The requirements to become a member are:

- Fill in an application.
- The application is presented to the Board of Directors where it is analysed and a resolution is made.
- Once the applicant is accepted, the applicant pays the contribution, membership fees and signs the beneficiary form.

Table 12 Contributions for Prolea. Source: (Prolea, 2015)

Service	Contributions (MX pesos)			Time tested or requirements
	Contribution	Fee	Contribution for silos	
Milk	$500.00	$500.00		3 months for quality
Feeds	$500.00	$4,000.00		1 year
Calf rearing	$500.00	$3,000.00		Brucella free
Agriculture	$500.00		$ 6, 000.00	
Credit	$500.00			Be active
Services	$500.00			

Members have to pay a contribution of 500 pesos which entitles them to a title of contribution. They also have to pay a membership fee which depends on the type of service they require. For example, as seen on table 12, the fee for commercialising their milk is of 500 pesos, the fee for having access to feed concentrates is of 4,000 pesos and for calf rearing, it is 3,000 pesos.

If a member leaves the cooperative, the cooperative pays their contribution back (not the fee) and the member is paid off.

5.2.3.4 Operation and services

Prolea is the UCCA's largest consumer of grains, purchasing 14,500 tonnes per year which represents 15% of UCCA's total purchases.

There has been a considerable growth in the services that Prolea has provided over two decades. In 1991, the cooperative started with 44 dairy farmers collecting and distributing their milk together. Later on, more services were provided. In 1993 (see table 13), the cooperative built its plant for mixing feed concentrates, and the next it got silos for grain storage. In that same year, 1994, the cooperative started providing services related to animal husbandry, mainly for nutrition and reproduction of cows. In 1995, Prolea was able to help their members with agricultural

services, providing machinery for farming; in this same year Prolea started the calf rearing service in the one location. Ten years later, in 2005, Prolea started offering further agricultural services, including more machinery for members as well as financing and loans services. Accounting services were provided by 2006 and two years later, in 2008, the cooperative started a dairy plant, processing some of the milk of its members with its own brand. In 2010, Prolea bought more silos to increase the capacity for more grain storage, therefore, being able to buy more volume and keep up with the volume of production needed for the concentrates.

Table 13 Services provided by Prolea. Source: (Prolea, 2015)

Services provided	Year started
Commercialisation of milk	1991
Plant for feed concentrates	1993
Commercialisation and storage of grains	1994
Animal husbandry consultancy services	1994
Agricultural consultancy services	1995
Rearing calves	1995
Agricultural services	2005
Financing services	2005
Health services	2005
Accountablity services	2006
Milk processing	2008
Increase on grain storage capacity	2010

The cooperative provides the following services:

- Milk distribution and commercialisation:

  Prolea sells and commercialises milk for members. Prolea sells their milk to the biggest Jalisco processors, including Sello Rojo and Liconsa. Sello Rojo usually collects milk from members but the payment goes through the cooperative.
- Feed plant:

Prolea purchases grain in large volume and mixes its own concentrate with the aim of making good quality product for their members at a low cost. Their prices are usually 15% below local feed stores.

- Calf rearing:

  The cooperative provides the service of rearing calves for their members. There are health requirements, such as being Brucella free, and a fee for this service. This service helps members to ensure that their calves grow in a safe environment while the farmer can focus on milk production.

- Agricultural services:

  The cooperative provides agricultural contractor services to harvest grain and forages, machinery rental and consultancy services on farming. There are also consultancy services in relation to animal husbandry, mainly relating to reproduction and nutrition.

- Health services:

  Prolea provides health services to their members.

- Credit and finance:

  The cooperative provides low interest rate loans to members.

- Milk processing:

  Prolea processes approximately 7% of cooperative milk into yogurt, cheese and cream under its own brand. Their products are distributed in a 80 kilometres radius around the region of Acatic, Jalisco.

The commercialisation of milk, grains and the feed plant provides liquidity to the cooperative. The main service used in the cooperative is feed concentrate. The consumption of these services funds the cooperative. The government has also provided some support, helping to fund the cooperative. According to their president, the cooperative has received valuable support from government programmes, helping fund the cooperative and develop infrastructure like silos for grains and machinery for the feed concentrate plant. This has been an important factor for their success and in their journey to become the largest UCCA cooperative.

Prolea provides its members with opportunities for professional development through its training programmes. For farmer members there are courses on dairy farms operation and for directors in

the social and business sector, management courses. "*The understanding of cooperative principles and knowledge and skills of farming from members has shown to be important for the success of the cooperative*" (President of Prolea, 2015). Technical training is given to members, in order to be less dependent on the veterinarian. According to the president, the results of training courses have made members believe that this is beneficial.

The president of Prolea stated that having a good balance between cooperative business training and production farming training is important for the success of the cooperative. He reasoned that the challenge for management is to be able to communicate the concepts that are valuable, suitable and productive for members, without overcomplicating the subjects covered and, therefore, making them attractive for members. Even though this has been challenging, his cooperative has gained good participation from their members in their training programmes.

5.2.3.5 Vision

The president of the cooperative believes that dairy farmers in this region have passion for dairy farming but identified non-professional practice as a problem, stating: "*They milk their cows, sell their milk and return to do the same thing every day. Some farmers are not very productive, they have liquidity problems and they do not have enough money to live on. There has to be more training to make dairy farming a more professional activity. Farmers that do this are the ones that survive."*

"Only about 70% of members of the cooperative understand what a cooperative really is; others only think on what they can get and do not think and work in a collective way. This is when problems and frustrations arise" (President of Prolea, 2015).

"Sometimes the government considers cooperatives as part of the development of the country and sometimes they support a type of organisation that is more favourable in a political way. If we were not organised as a cooperative, a lot of us would be out of business. 2015 has been terrible, making a lot of people and members retire from farming" (President of Prolea, 2015).

"There are some products competing with our dairy products that are not real dairy products, such as dairy formulas and cheeses, having less quality and lower nutritional value, but being offered cheaply. When we enter into this scheme of competition, it creates a complicated situation for products using authentic milk. The government needs to change its policy. If the

government takes care of the dairy supply chain, it will take care of many jobs, proper nutrition for its population and creating a productive and healthy chain. The law is old and obsolete; it does not help a lot. It only regulates a few things and cooperatives have evolved" (President of Prolea, 2015).

*"We have to change the way of thinking; we as members and farmers have to think as business people. Even if the member has one cow, he has to think that way. We need to have clear objectives. Members lack farm management skills and most members focus only on production without considering the farm in terms of whole farm business" (*President of Prolea, 2015).

*"If some people think in a different way, we won't agree. People need to realize what they really need, because sometimes they don't even know what that is. Once this happens, they will look for direct support from their cooperative, asking for what they need to grow and develop and there will be a change in the way of thinking" (*President of Prolea, 2015).

The mission and vision of Prolea is to facilitate their members in the development of productive activities, leading to both a better life and quality product that sends a safe consumption message.

5.2.4 General Performance of the Cooperatives Studied

These three cooperatives were the 2015 top three buyers of grains in the UCCA; however, they show some variation in the volume of grain purchased through the last five years (figure 9). As seen on figure 10 the price of grains has been low for the last two years (2014 and 2015), but the volume of Prolea and Pedro Ezqueda purchasing has decreased, whereas Nutrimentos has considerably increased its purchases in the last year (2014), having lower volume of purchases in 2013.

According to the General Manager of UCCA, the purchase volatility is mainly due to the purchases the cooperatives make outside the UCCA, finding, in some cases, better prices with other grain suppliers. Pedro Ezqueda used to buy about 80% from UCCA four years ago, but now only buys some ingredients. However, Nutrimentos now buys almost 100% from UCCA and Prolea buys about 90 – 95% from UCCA. Other factors that create this volatility are: local crop yields; opportunistic suppliers of grains and forages; ingredient substitution; price volatility of grains; price of milk and meat; and rotation of members in the cooperatives.

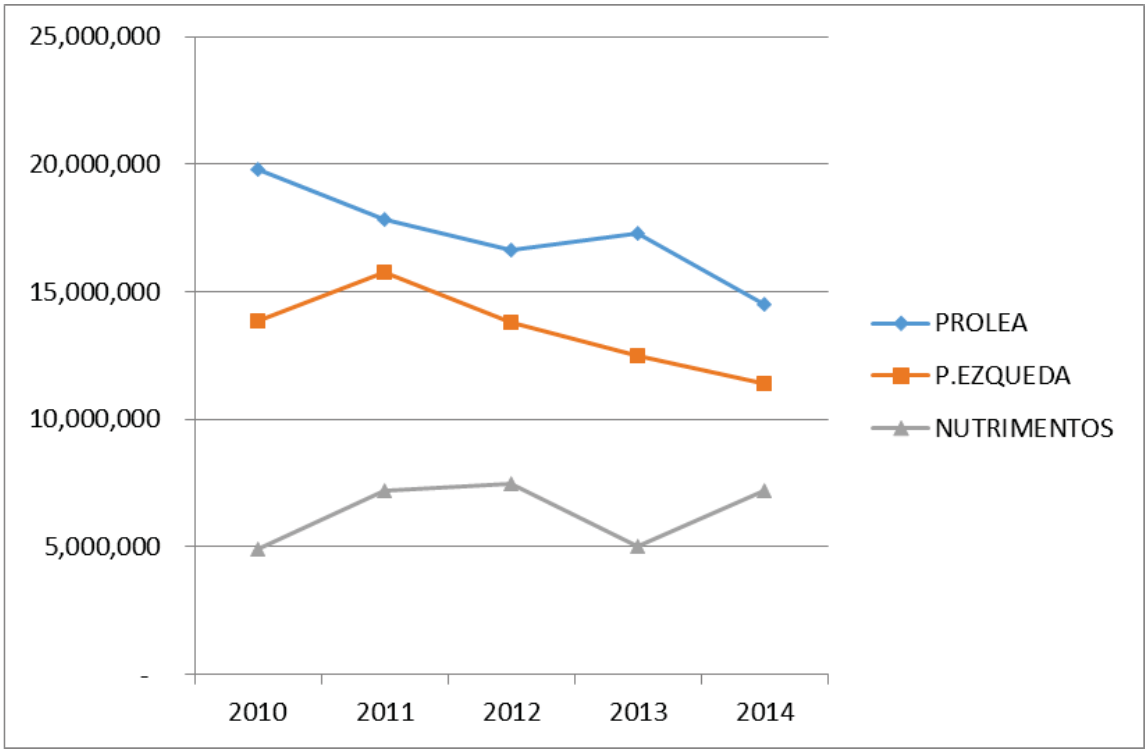

Figure 9 Purchases of grains by cooperative to UCCA 2010 – 2014 (Kgs). Source: (UCCA, 2015)

According to the General Manager of UCCA, the volatility of the price of grains seen in figure 10 is mainly affected by factors like: weather; crop yields; political factors; consumption; speculation from investors; oil; ethanol; imports; and exports.

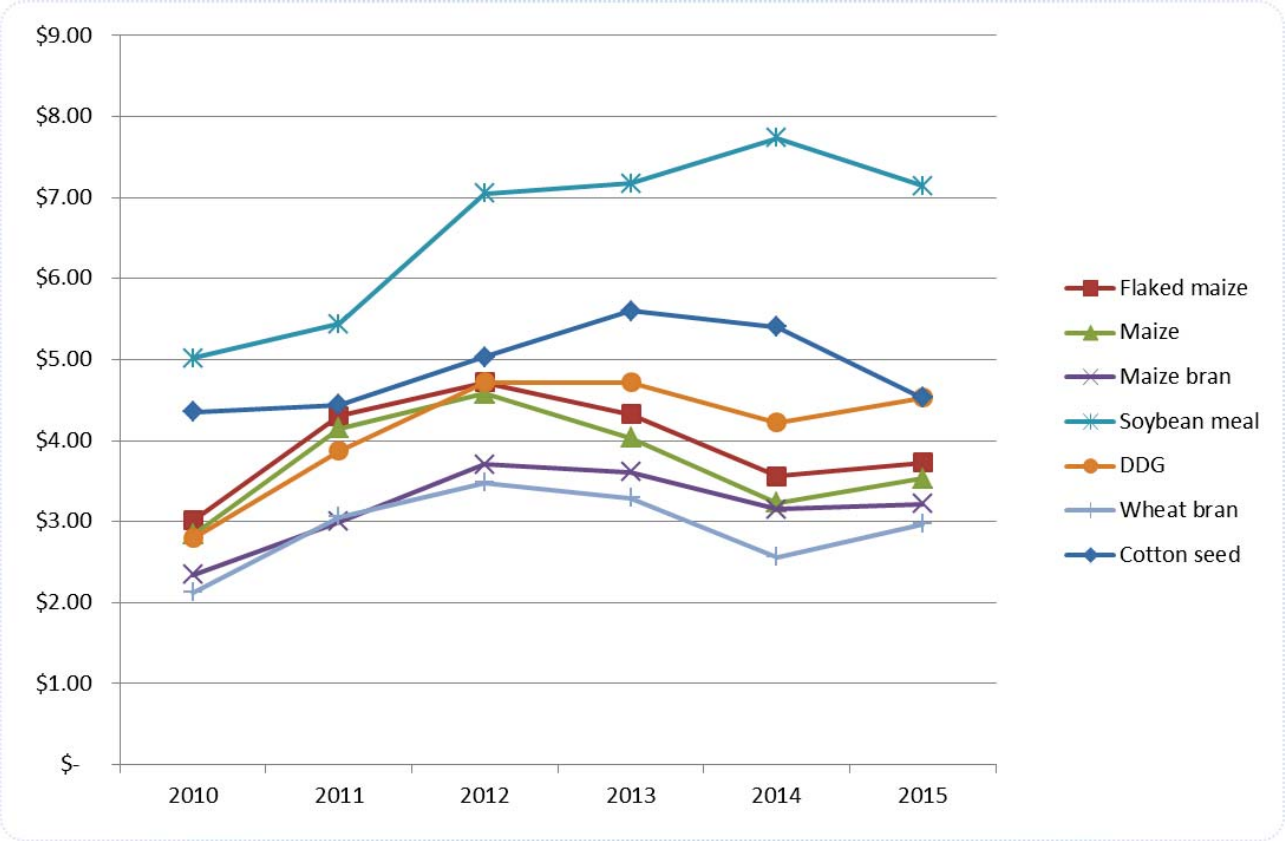

Figure 10 Volatility of prices of main grains (MX pesos). Source: (UCCA, 2015)

As part of the process, UCCA buys grains and the cooperatives provide the service of mixing the grains into concentrates. All the cooperatives that form UCCA receive the same price for each ingredient used for their concentrates. The cooperatives offer different types of concentrates for different species (dairy cows, beef cattle, pork and horses) and for different levels of production, considering different levels of nutrients in the formulation. The concentrates are formulated mainly by the UCCA nutritionist and are based on the specific nutritional needs for the animals and preferences of the cooperatives where the concentrates are formulated.

In relation to the costs and margins for the concentrates, table 14 shows the main dairy concentrates for the three cooperatives studied which all have a different combination of ingredients. These three formulations show a slight variation on the final price for members and it can also be seen that there is a close margin for profit and processing expenses. The margins are all close to 5% as table 14 shows with Nutrimentos having a margin of 5.65%, Prolea 5.39% and Pedro Ezqueda 5.04%. These low margins let the cooperatives provide members with their

main benefit: good quality concentrates at low prices, being approximately 15% less than commercial feed stores in the region.

Table 14 Costs of grains and margins on main dairy concentrate for each cooperative 2015 (MX pesos). Sources: (UCCA, Nutrimentos, Prolea and Pedro Ezqueda, 2015)

	Pedro Ezqueda			Nutrimentos			Prolea		
Ingredient	**Cost/kg**	**Kgs**	**Cost/tonn**	**Cost/kg**	**Kgs**	**Cost/tonn**	**Cost/kg**	**Kgs**	**Cost/tonn**
Flaked maize	$ 3.98	413	$ 1,643.74	$3.98	381	$1,516.38	$3.98	0	$0.00
Maizemeal	$ 3.70	0	$ -	$3.70	0	-	$3.70	390	$1,443.00
Maize gluten	$ 10.50	30	$ 315.00	$10.50	0	-	$10.50	0	$0.00
DDG	$ 4.25	60	$ 255.00	$4.25	95	$403.75	$4.25	130	$552.50
Canola meal	$ 5.00	159	$ 795.00	$5.00	162	$810.00	$5.00	80	$400.00
Wheat bran	$ 3.04	40	$ 121.60	$3.04	57	$173.28	$3.04	55	$167.20
Maize bran	$ 3.36	136	$ 456.96	$3.36	81	$272.16	$3.36	130	$436.80
Soybean meal	$ 7.25	67	$ 485.75	$7.25	100	$725.00	$7.25	140	$1,015.00
Molasses	$ 2.65	29	$ 76.85	$2.65	38	$100.70	$2.65	35	$92.75
Minerals	**$ 7.00**	41	$ 287.00	**$7.00**	57	$399.00	**$10.00**	40	$400.00
Cotton seed	$ 4.93	25	$ 123.25	$4.93	29	$142.97	$4.93	0	$0.00
Total		1000	$ 4,560.15		1000	$4,543.24		1000	$4,507.25
Sale price for members			**$ 4,790.15**			**$4,800.00**			**$4,750.00**
Profit and processing expenses			**5.04%**			**5.65%**			**5.39%**

Table 15 Cooperatives summary table

	Pedro Ezqueda	**Nutrimentos**	**Prolea**
Town	San Juan de los Lagos	Capilla de Guadalupe	Acatic
Region	Los Altos	Los Altos	Los Altos
Background of the leader	Farmer	Farmer	Farmer
Years of the leader directing the coop	1	11	27
Year of foundation	1993	1981	1991
Number of members at foundation	25	145	44
Number of members in 2015	423	166	575
Governance structure	Well formed according to the law	Well formed according to the law	Well formed according to the law
Decision making	One member one vote	One member one vote	One member one vote
Main services	Feed concentrates	Feed concentrates	Feed concentrates, milk processing, milk distribution, agricultural and calf rearing
Training	Randomly include cooperative	Not provided at the moment	Regularly include management, cooperative and production
Rebates	No	No	No

Chapter 6

6 Results of Member Survey

This chapter presents the quantitative results from the member survey. These results provide the view of members and measure their perception of the factors that influence the success of the three cooperatives studied, enriching the qualitative results previously presented.

6.1 Survey response rate

The survey was conducted through face to face structured interviews. A total of 90 members across the three cooperatives were asked to participate with only two individuals declining. The response rate was of 97.8%. Face to face interviews helped achieve this high response rate.

Face to face interviews have several strengths. These interviews are structured, flexible and adaptable. They are based on personal interaction and can be controlled within the environment. On the other hand, there are also some disadvantages, such as interviewer bias, interviewee response bias, high cost per respondent, geographical limitation and time pressures on respondents (Alreck & Settle, 2004).

6.2 Respondent descriptive characteristics

The following section outlines the descriptive characteristics of member demographic variables.

6.2.1Age

The average age of the respondents was of 51.4 years old. Almost 50% of the participants were in the 51 to 70 range, approximately 30% of participants were less than 40 years old and about 20% were more than 70 years old.

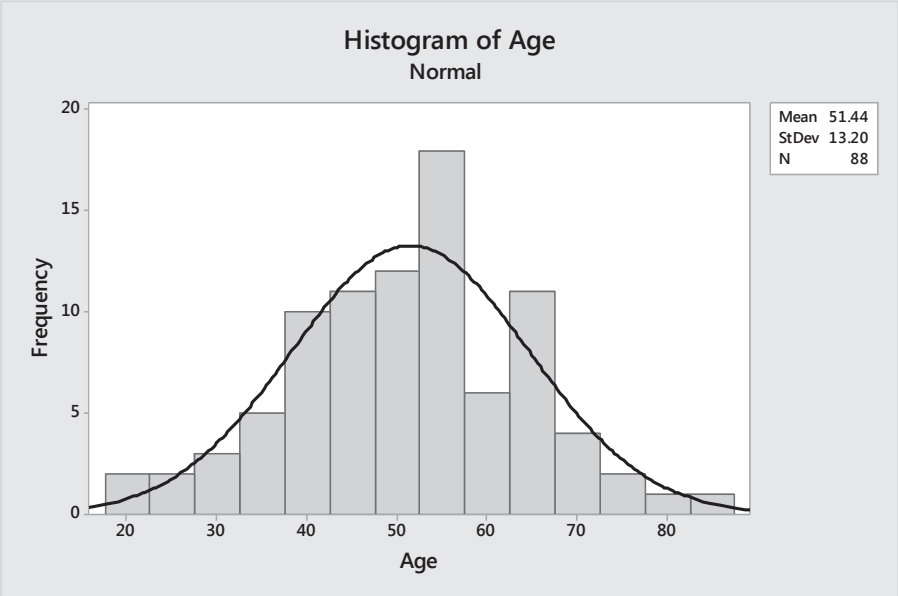

Figure 11 Age of respondents

6.2.2 Milk Production per cow per day

The average milk production per cow of the members that participated in the survey was of 20.37 litres per cow per day. More than 40% produce between 20 and 25 litres, 30% produce more than 25 litres and about 25% produce less than 20 litres.

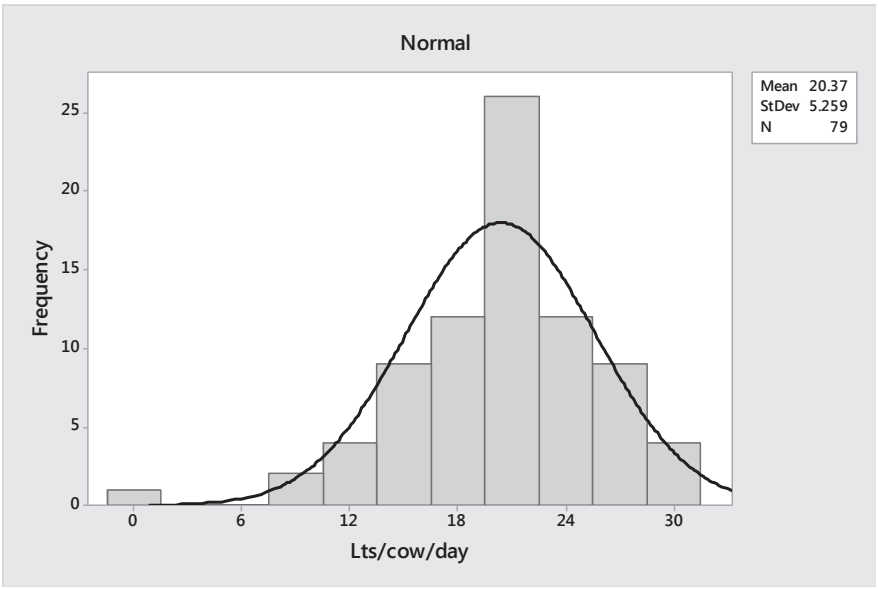

Figure 12 Milk production per cow per day

6.2.3 Experience of the members in the business

The average years of experience in the business of the members that participated on the survey was 28.4 years. About 55% of the participants had between 20 and 44 years of experience. More than 30% had more than 44 years of experience and about 15% had less than 20 years of experience.

Figure 13 Experience of participants in the business

6.2.4 Number of cows by participant

The average number of cows by participant was of 75.7. About 45% of the participants had between 50 and 100 cows, 25% had less than 50 cows, 20% had between 100 and 250 and 10% had more than 250 cows.

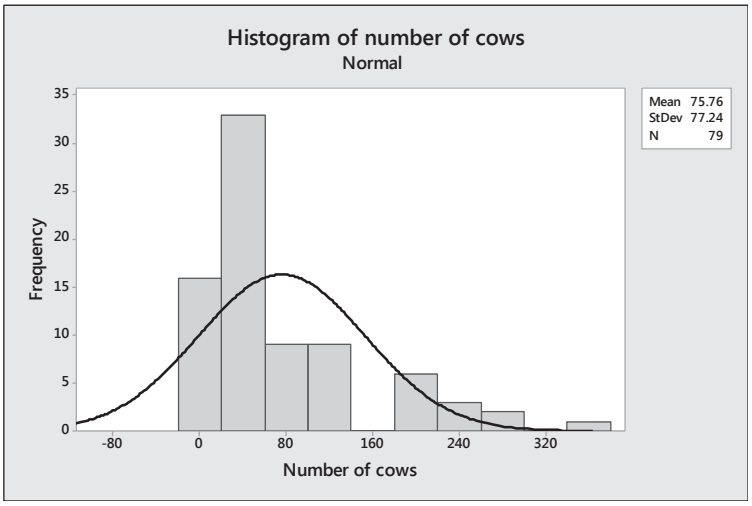

Figure 14 Number of cows by participant

6.2.5 Level of education of participants

The level of education of the members that participated in the survey was mostly elementary at 52%. Approximately 20% had secondary education, about 12% had high school education, about 8% had a university education (or higher) and 8% had no education.

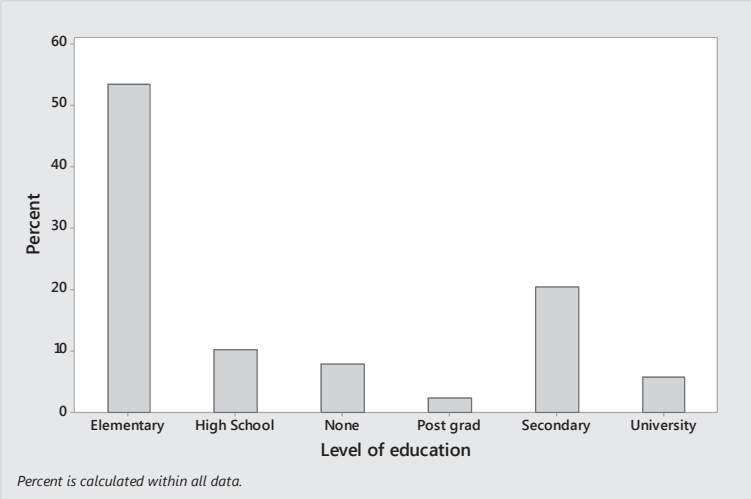

Figure 15 Level of education of participants

6.3 Distribution of respondents by factors for success

This section presents the distribution of the respondents across the five categories (leadership and management, members, benefits, communication and external factors) used in the survey to capture member perception of the factors that influence the success of their cooperatives.

6.3.1Leadership and management

Table 16 Distribution of respondents for the factors for success for leadership and management

L1	The leader of your cooperative has a good understanding of cooperative business	Count	Count %
5	Strongly agree	43	49%
4	Agree	28	32%
3	Neither agree or disagree	12	14%
2	Disagree	5	6%
1	Strongly disagree	0	0%
	Total	88	100%

L2	The leader of your cooperative has a good understanding of the dairy industry	Count	Count %
5	Strongly agree	38	43%
4	Agree	35	40%
3	Neither agree or disagree	12	14%
2	Disagree	3	3%
1	Strongly disagree	0	0%
	Total	88	100%

L3	The leader of your cooperative has a positive impact on the development of your cooperative	Count	Count %
5	Strongly agree	38	43%
4	Agree	37	42%
3	Neither agree or disagree	10	11%
2	Disagree	3	3%
1	Strongly disagree	0	0%
	Total	88	100%

L4	You are pleased with the running of your cooperative as a business	Count	Count %
5	Strongly agree	40	45%
4	Agree	27	31%
3	Neither agree or disagree	11	13%
2	Disagree	8	9%
1	Strongly disagree	2	2%
	Total	88	100%

L5	You are pleased on how the cooperative invests your equity capital	Count	Count %
5	Strongly agree	37	42%
4	Agree	25	28%
3	Neither agree or disagree	20	23%
2	Disagree	4	5%
1	Strongly disagree	2	2%
	Total	88	100%

The results indicated that the majority of the respondents have a positive perspective of the capabilities of their leadership and management. Most of the members strongly agree (49%) that their leader has a good understanding of cooperative business, 32% agree and only 6% disagree

with this statement. In terms of their leader's understanding of the dairy industry, members also had a positive response, with 43% strongly agreeing, 40% agreeing and only 3% disagreeing. Members believe that their leader has a positive impact on the development of their cooperative with strong agreement of 43% strongly agree, 42% in agreement and only 3% disagreeing.

Most of the members of these cooperative are pleased with the running of the cooperative as a business (45% strongly agree and 31% agree) and how the cooperative invest equity capital (42% strongly agree and 28% agree). Some members show some level of dissatisfaction with the running of the cooperative as a business (9% disagree and 2% strongly disagree) and on how the cooperative invests equity capital (5% disagree and 2% strongly disagree).

6.3.2 Membership

Table 17 Distribution of respondents for the factors for success for membership

M1	You frequently participate in the general assembly	Count	Count %
5	Strongly agree	66	75%
4	Agree	13	15%
3	Neither agree or disagree	2	2%
2	Disagree	6	7%
1	Strongly disagree	1	1%
	Total	88	100%

M2	Your suggestions in the general assembly are taken into account	Count	Count %
5	Strongly agree	38	43%
4	Agree	25	28%
3	Neither agree or disagree	16	18%
2	Disagree	7	8%
1	Strongly disagree	2	2%
	Total	88	100%

M3	You have a good understanding of cooperative business	Count	Count %
5	Strongly agree	13	15%
4	Agree	22	25%
3	Neither agree or disagree	34	39%
2	Disagree	15	17%
1	Strongly disagree	4	5%
	Total	88	100%

M4	You have knowledge and skills relating to the dairy industry	Count	Count %
5	Strongly agree	23	26%
4	Agree	36	41%
3	Neither agree or disagree	25	28%
2	Disagree	2	2%
1	Strongly disagree	2	2%
	Total	88	100%

M5	You wish to continue as a cooperative member in the next 5 years	Count	Count %
5	Strongly agree	78	89%
4	Agree	8	9%
3	Neither agree or disagree	1	1%
2	Disagree	0	0%
1	Strongly disagree	1	1%
	Total	88	100%

It can be seen in these results that members do not perceive themselves as knowledgeable of cooperative business with 39% neither agreeing nor disagreeing, 25% agreeing and 17% disagreeing. Their perception of skills and knowledge of the dairy industry scored higher (41% agree, 28% neither agree nor disagree and only 2% disagree). It is interesting to note that despite most of the members having many years of experience in the industry, their perception is variable.

Members in general seemed to have high participation levels in the general assembly and were willing to stay in the cooperative. The results showed that 75% strongly agree that they participate in the general assembly; 43% agree that their suggestions in the general assembly are taken into account; and 89% strongly agree to stay in their cooperative for at least the next 5 years.

6.3.3 Communication

Table 18 Distribution of respondents for the factors for success for communication

C1	Communication among members is strong	Count	Count %
5	Strongly agree	22	25%
4	Agree	38	43%
3	Neither agree or disagree	21	24%
2	Disagree	6	7%
1	Strongly disagree	1	1%
	Total	88	100%

C2	You are well informed about the strategies of your cooperative	Count	Count %
5	Strongly agree	22	25%
4	Agree	23	26%
3	Neither agree or disagree	26	30%
2	Disagree	13	15%
1	Strongly disagree	4	5%
	Total	88	100%

C3	You are well informed about the results of your cooperative	Count	Count %
5	Strongly agree	20	23%
4	Agree	30	34%
3	Neither agree or disagree	22	25%
2	Disagree	12	14%
1	Strongly disagree	4	5%
	Total	88	100%

C4	Management always explains decisions about the cooperative to members	Count	Count %
5	Strongly agree	34	39%
4	Agree	31	35%
3	Neither agree or disagree	12	14%
2	Disagree	7	8%
1	Strongly disagree	4	5%
	Total	88	100%

The results revealed that 43% of members agree that the communication among members is strong, 25% strongly agree, 24% neither agree nor disagree and only 7% disagree. It can be noted how the perception of communication between members varies.

The survey also showed that 30% neither agree nor disagree on being informed about the cooperative strategies, with 26% agreeing and 25% strongly agreeing. Also, 34% agree they are informed of the results of their cooperative and25% neither agree nor disagree. It is interesting that 39% strongly agree that management always explains decisions about the cooperative to members.

Although members perceived and recognised that management explains decisions, some members seem to be not very informed or interested in the results and plans of their cooperative.

6.3.4 Benefits

Table 19 Distribution of respondents for the factors for success for benefits

B1	You are satisfied with the price of the concentrate of your cooperative	Count	Count %
5	Strongly agree	22	25%
4	Agree	35	40%
3	Neither agree or disagree	13	15%
2	Disagree	8	9%
1	Strongly disagree	10	11%
	Total	88	100%

B2	The services that your cooperative provides help your business	Count	Count %
5	Strongly agree	27	31%
4	Agree	48	55%
3	Neither agree or disagree	7	8%
2	Disagree	4	5%
1	Strongly disagree	2	2%
	Total	88	100%

B3	Your cooperative helps to improve the livelihood in your community	Count	Count %
5	Strongly agree	38	43%
4	Agree	33	38%
3	Neither agree or disagree	14	16%
2	Disagree	3	3%
1	Strongly disagree	0	0%
	Total	88	100%

B4	Your cooperative provides training and education to the members	Count	Count %
5	Strongly agree	17	19%
4	Agree	39	44%
3	Neither agree or disagree	13	15%
2	Disagree	13	15%
1	Strongly disagree	6	7%
	Total	88	100%

In terms of the level of satisfaction regarding the benefits received by the cooperatives, 25% strongly agree that they are satisfied with the price of feed concentrate with 40% agreeing and 11% strongly disagreeing. Members are aware that they received a better price through participating with the cooperative although there are still some members that think that the price could be improved. Although members are satisfied with the services that the cooperative provides to help to their business, 55% agree, 31% strongly agree and only 5% disagree.

These cooperatives had a positive perception of the cooperative provision of social benefits helping develop the community. The results showed that members perceived that their cooperative helps improve the livelihood in the community with 43% strongly agreeing, 38% agreeing and only 3% in disagreement.

The results showed that the level of satisfaction relating to the benefits of the provision of training and education was more diversified with 44% in agreement, 19% in strong agreement but with 15% disagreeing. The programmes on training and education are not clear or well established and the participation from members has been inconsistent.

6.3.5 External factors

Table 20 Distribution of respondents for external factors for success

EF1	The actual situation of the dairy industry provides a favourable environment for the development of your business	Count	Count %
5	Strongly agree	0	0%
4	Agree	7	8%
3	Neither agree or disagree	15	17%
2	Disagree	24	27%
1	Strongly disagree	42	48%
	Total	88	100%

EF2	The programs from the government have been appropiate for the development of your cooperative	Count	Count %
5	Strongly agree	10	11%
4	Agree	26	30%
3	Neither agree or disagree	22	25%
2	Disagree	15	17%
1	Strongly disagree	15	17%
	Total	88	100%

EF3	Your cooperative has received support from NGOs	Count	Count %
5	Strongly agree	5	6%
4	Agree	22	25%
3	Neither agree or disagree	39	44%
2	Disagree	17	19%
1	Strongly disagree	5	6%
	Total	88	100%

EF4	The government includes the cooperative movement as part of its national development plan	Count	Count %
5	Strongly agree	11	13%
4	Agree	23	26%
3	Neither agree or disagree	28	32%
2	Disagree	20	23%
1	Strongly disagree	6	7%
	Total	88	100%

The members of these cooperatives perceived external factors as elements that strongly affect their success. The actual situation of the dairy industry is perceived as highly unfavourable. The results from the survey showed that 48% strongly disagree that the actual situation of the dairy industry provides a favourable environment for the development of their business, with a further 27% disagreeing and 17% neither in agreement or disagreement. Members especially disagree on the price paid for their milk.

In terms of help provided by the government, 30% agree that the programmes from the government have been appropriate for the development of their cooperative, with 25% neither agreeing or disagreeing and 17% in disagreement. The respondents mostly disagree on receiving support from NGOs, 44% neither agree or disagree and 25% disagree or strongly disagree.

The perception of the government including the cooperative movement as part of its national development plan seems ambiguous for members with 32% neither agreeing or disagreeing, 26% agreeing and 23% disagreeing.

6.4 Results

6.4.1 Coefficient of variation

The results from the survey are listed on table 21 with all the factors measured, ranking them based on their coefficient of variation. The coefficient of variation presents the level of perception of the participants for each factor. It is a measure of spread that describes the amount of variability relative to the mean. The lower the value, the stronger the perception for that factor.

As we can see on table 21 the strongest factors perceived by the participants were:

1. Member continuity

   The participants gave higher scores with lower variation when they were asked if they wish to continue as a cooperative member for the next five years. In relation to the rest of the factors, this is the one that is perceived as strongest for these members.
2. Leader's positive impact

   In relation to the perception of the leaders of the cooperatives studied, the participants gave high scores when they were asked if the leader of their cooperative had a positive impact on the development of their cooperative. This was the second strongest factor perceived for these participants.
3. Leader's understanding of the dairy industry

   As part of the category of leadership and management, the participants perceived that their leader had a good understanding of the dairy industry. The participants had a high perception of the level of leader knowledge of the dairy industry.
4. Benefits for the community

   In relation to the benefits of the cooperative, participants strongly perceived that their cooperative helps improve the livelihood in their community.
5. Member participation in assemblies

In relation to membership, the participants gave high scores when they were asked if they frequently participated in the general assembly. These participants indicated that they have high levels of participation in the general assemblies.

The weakest factors for these cooperatives perceived by the participants were:

1. Impact of the situation of the dairy industry

   This external factor is perceived by the participants as the weakest of all the factors measured. The participants were asked if the actual situation of the dairy industry provides a favourable environment for the development of their business. The participants perceived the dairy industry as unfavourable for their cooperative.

2. Support from government

   Also an external factor, the participants perceived the support from the government as a weak factor for their cooperative. The participants were asked if government programmes had been appropriate for the development of their cooperative. The participants expect more support from the government.

3. Satisfaction relating to the price of concentrate

   In relation to the benefits received, the participants perceived the price of concentrate as part of the weakest factors measured. They were asked if they were satisfied with the price of the concentrate of their cooperative. The results showed that in general participants are not completely satisfied with the price and expect better prices for the concentrates purchased by the cooperative.

4. Cooperatives as development plan for Mexico

   Another part of the external factors, the participants do not consider the government including the cooperative movement as part of its national development plan. They perceive that the government does not encourage the formation of cooperatives in the country.

5. Training for members

   As part of the benefits provided by these cooperatives, participants perceived that their cooperative does not provide enough training and education to their members. Participants are not satisfied with the level of training provided by their cooperatives.

Table 21 Ranking of member's perception of factors for success in farmer cooperatives

Ranking	Variable	Factor	N	Min	Max	Mean	Std Dev	CV
1	M5	Member continuity	88	1	5	4.84	0.54	0.11
2	L3	Leader's positive impact	88	2	5	4.25	0.79	0.19
3	L2	Leader's understanding on dairy industry	88	2	5	4.23	0.81	0.19
4	B3	Benefits for the community	88	2	5	4.20	0.83	0.20
5	M1	Member participation in assembly	88	1	5	4.56	0.92	0.20
6	L1	Leader's understanding on coops	88	2	5	4.24	0.90	0.21
7	B2	Satisfaction on the services	88	1	5	4.07	0.88	0.22
8	M4	Member's understanding on the dairy industry	88	1	5	3.86	0.91	0.24
9	C1	Communication among members	88	1	5	3.84	0.92	0.24
10	L5	Satisfaction on the investment of equity capital	88	1	5	4.03	1.02	0.25
11	L4	Satisfaction on the running of the coop as a business	88	1	5	4.08	1.07	0.26
12	M2	Participation in GA taken into account	88	1	5	4.02	1.07	0.27
13	C4	Mgmt explains decisions to members	88	1	5	3.95	1.12	0.28
14	EF3	Support from NGOs	88	1	5	3.06	0.95	0.31
15	C3	Members are informed about results	88	1	5	3.57	1.12	0.31
16	M3	Member's understanding on coops	88	1	5	3.28	1.06	0.32
17	C2	Members are informed about strategies	88	1	5	3.52	1.15	0.33
18	B4	Training for members	88	1	5	3.55	1.16	0.33
19	EF4	Coops as development plan for Mex	88	1	5	3.15	1.12	0.36
20	B1	Satisfaction on price of concentrate	88	1	5	3.58	1.28	0.36
21	EF2	Support from government	88	1	5	3.01	1.27	0.42
22	EF1	Impact of the situation of the dairy industry	88	1	4	1.85	0.98	0.53

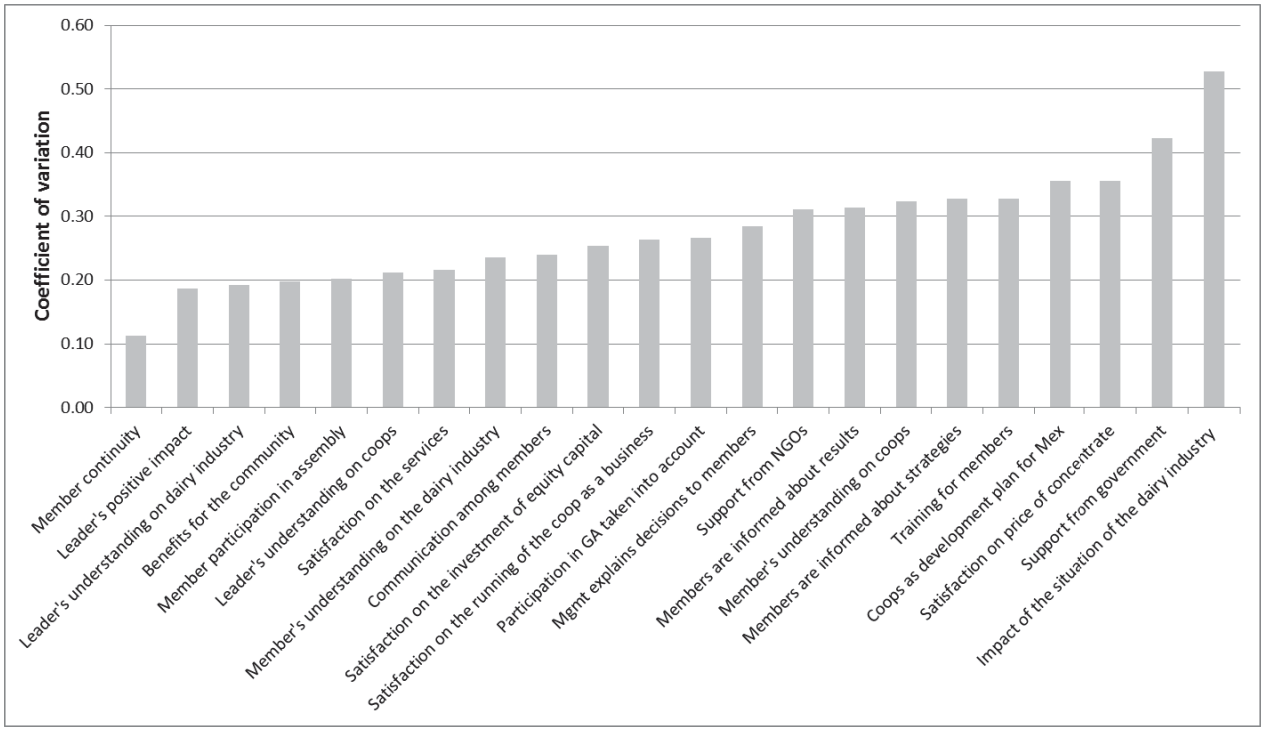

Figure 16 Member's perception of factors for success in farmer cooperatives

On table 22, it can be seen the five categories surveyed including the factors. The category of membership was perceived by the participants as the strongest category. The category of leadership and management had a slight higher mean but higher variation, having a higher CV. The category of benefits was ranked third, having a CV very close to leadership and management. The two weakest categories are communication and external factors. The category of communication in cooperatives is perceived with high variation and is ranked fourth. The weakest category perceived by the participants was the external factors. The participants considered external factors to affect their cooperative in a negative way.

Table 22 Member's perception of factors for success by category

Ranking	Variable	Factor	N	Min	Max	Mean	Std Dev	CV
1	M_avg	Membership	88	2.4	5	4.11	0.60	0.14
2	L_avg	Leadership and management	88	1.6	5	4.17	0.75	0.18
3	B_avg	Benefits	88	2	5	3.85	0.72	0.19
4	C_avg	Communication	88	1	5	3.72	0.82	0.22
5	EF_avg	External factors	88	1.5	4.5	2.77	0.70	0.25

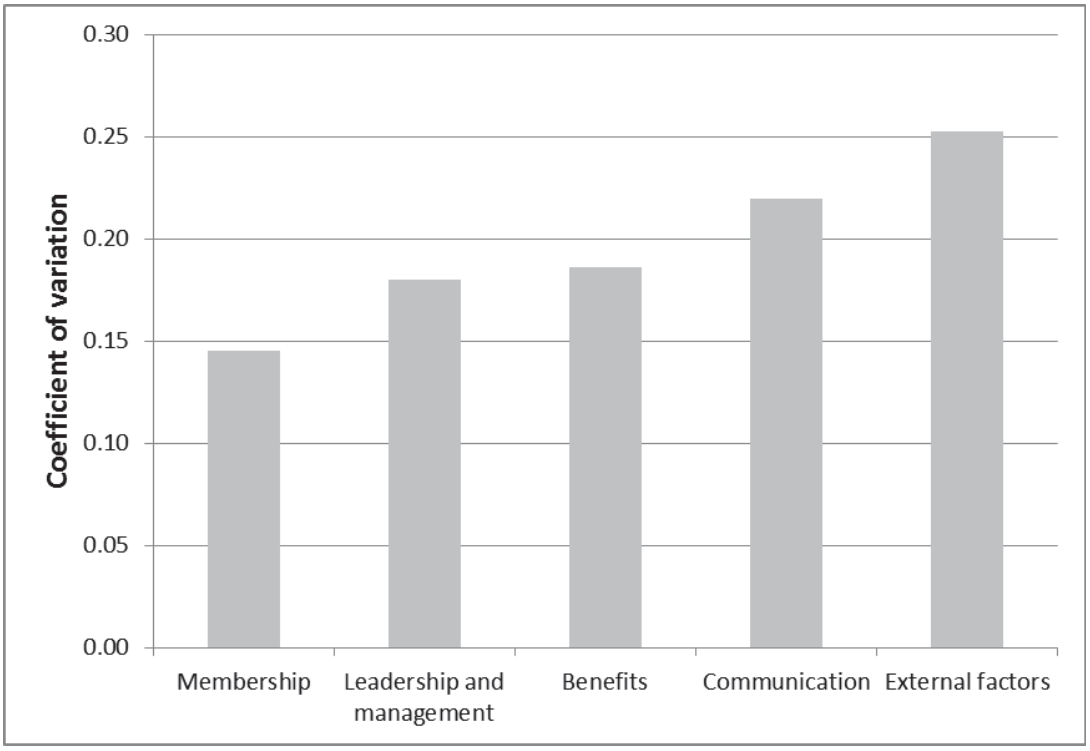

Figure 17 Member's perception of factors for success by category

6.4.2 Cluster analysis and ANOVA

The participants were clustered to analyse if there was a different perception for the categories between different groups. The participants were analysed in groups by: level of milk production, level of education and cooperative. A one-way analysis of variance (ANOVA) was implemented to analyse the difference between means for the different groups. This analysis determines whether the means of two or more groups differ (Minitab, 2010). ANOVA is a powerful collection of parametric statistical procedures for the analysis of data, essentially comparing the means of various groups of data (Petrie & Watson, 2013).

Table 23 Categories of factors for success by level of milk production

Level of milk production		Leadership and mgmt			Membership			Communication			Benefits			External factors		
	N	Mean	Std dev	p-value	Mean	Std dev	p-value	Mean	Std dev	p-value	Mean	Std dev	p-value	Mean	Std dev	p-value
High	51	4.1	0.8	0.603	4.19	0.55	0.177	3.79	0.79	0.27	3.87	0.69	0.61	2.68	0.64	0.227
Low	28	4.2	0.68		4.01	0.59		3.58	0.75		3.78	0.75		2.86	0.65	

The participants were grouped in two clusters, high level of production per cow and low level of production per cow. High level of production was considered above the mean of litres produced per cow per member (20 lts/cow/day) and below the mean was considered low level. The results

showed no statistically significant difference (P > 0.05) for the means between levels of production for each category. High producers and low producers showed no different perception for each category.

Table 24 Categories of factors for success by level of education

Level of education		Leadership and mgmt			Membership			Communication			Benefits			External factors		
	N	Mean	Std dev	p-value	Mean	Std dev	p-value	Mean	Std dev	p-value	Mean	Std dev	p-value	Mean	Std dev	p-value
Post grad	2	4	0		4	0.56		3.25	1.06		3.37	0.17		2.12	0.17	
University	5	4.16	0.93		4.64	0.32		3.55	0.85		4.1	0.99		3.05	1.08	
High School	9	4.06	0.82	0.971	4.26	0.8	0.288	3.66	1.17	0.718	3.77	1.01	0.716	2.5	0.57	0.468
Secondary	18	4.18	0.68		3.93	0.54		3.62	0.92		3.73	0.69		2.75	0.68	
Elementary	47	4.21	0.72		4.1	0.58		3.84	0.75		3.92	0.66		2.78	0.72	
None	7	3.97	1.16		4.11	0.59		3.46	0.26		3.67	0.59		3	0.35	

The participants were grouped by level of education. The results showed no statistically significant difference (P > 0.05) for the means between levels of education for each category. All participants from all education levels showed no different perception for each category. However due to lack of data for each level of education the output from this analysis was not considered reliable.

Table 25 Categories of factors for success by cooperatives

Cooperatives		Leadership and mgmt			Membership			Communication			Benefits			External factors		
	N	Mean	Std dev	p-value	Mean	Std dev	p-value	Mean	Std dev	p-value	Mean	Std dev	p-value	Mean	Std dev	p-value
Nutrimentos	14	4.65	0.48		4.5	0.59		4.46	0.49		4.39	0.61		2.66	0.67	
Pedro Ezqueda	29	3.89	0.63	0.002	4.15	0.44	0.01	3.38	0.62	0	3.81	0.64	0.018	2.44	0.55	0
Prolea	36	4.13	0.85		3.9	0.59		3.7	0.81		3.65	0.72		3.02	0.6	

The participants were grouped by cooperatives. The results showed statistically significant difference (P < 0.05) for the means between cooperatives for each category. Nutrimentos had higher means for the first four categories (leadership and management, membership, communication and benefits) and Prolea had higher means for external factors. Pedro Ezqueda did not stand out in any category.

The perception of the members of Nutrimentos of their leaders seemed more positive than the others. Pedro Ezqueda presented lower mean scores for leadership mainly because the president of the cooperative is new, being in the position for less than a year.

6.4.3 Principal component analysis

A principal component analysis was implemented to explain the variance-covariance of the variables measuring the perception from members for the factors for success. The dimensionality of the data was reduced by implementing the PCA.

Table 26 Correlation matrix from PCA of factors for success in farmer cooperatives

Correlation Matrix																						
	L1	**L2**	**L3**	**L4**	**L5**	**M1**	**M2**	**M3**	**M4**	**M5**	**C1**	**C2**	**C3**	**C4**	**B1**	**B2**	**B3**	**B4**	**EF1**	**EF2**	**EF3**	**EF4**
L1		0.78	0.63	0.52	0.59	0.16	0.47	0.19	0.28	0.34	0.44	0.49	0.42	0.36	0.18	0.42	0.24	0.41	0.25	0.28	0.12	0.48
L2	0.78		0.64	0.57	0.53	0.26	0.48	0.31	0.37	0.24	0.37	0.48	0.46	0.31	0.17	0.43	0.20	0.35	0.16	0.26	0.13	0.38
L3	0.63	0.64		0.44	0.49	0.06	0.44	0.19	0.16	0.23	0.35	0.50	0.42	0.30	0.26	0.50	0.44	0.32	0.03	0.11	0.04	0.31
L4	0.52	0.57	0.44		0.65	0.29	0.42	0.33	0.26	-0.02	0.25	0.29	0.35	0.36	0.27	0.44	0.30	0.26	0.22	0.09	-0.12	0.20
L5	0.59	0.53	0.49	0.65		0.36	0.60	0.31	0.18	0.32	0.35	0.45	0.42	0.43	0.35	0.61	0.37	0.27	0.17	0.18	-0.11	0.30
M1	0.16	0.26	0.06	0.29	0.36		0.43	0.25	0.23	0.06	0.13	0.26	0.38	0.26	0.00	0.19	0.21	0.12	0.04	-0.10	0.08	0.03
M2	0.47	0.48	0.44	0.42	0.60	0.43		0.39	0.21	0.34	0.20	0.59	0.53	0.41	0.25	0.36	0.38	0.18	0.10	0.06	0.04	0.14
M3	0.19	0.31	0.19	0.33	0.31	0.25	0.39		0.48	0.08	0.09	0.31	0.27	0.12	0.39	0.20	0.19	0.02	-0.01	-0.10	-0.05	-0.02
M4	0.28	0.37	0.16	0.26	0.18	0.23	0.21	0.48		0.14	0.12	0.24	0.21	0.09	0.18	0.25	0.20	0.10	-0.01	-0.06	-0.02	0.01
M5	0.34	0.24	0.23	-0.02	0.32	0.06	0.34	0.08	0.14		0.41	0.24	0.24	0.35	0.10	0.31	0.15	0.10	0.02	0.20	0.04	0.19
C1	0.44	0.37	0.35	0.25	0.35	0.13	0.20	0.09	0.12	0.41		0.37	0.26	0.38	0.16	0.28	0.25	0.25	0.17	0.21	0.10	0.41
C2	0.49	0.48	0.50	0.29	0.45	0.26	0.59	0.31	0.24	0.24	0.37		0.68	0.39	0.27	0.39	0.43	0.22	0.18	0.16	-0.03	0.36
C3	0.42	0.46	0.42	0.35	0.42	0.38	0.53	0.27	0.21	0.24	0.26	0.68		0.44	0.27	0.40	0.34	0.22	0.15	0.12	-0.04	0.20
C4	0.36	0.31	0.30	0.36	0.43	0.26	0.41	0.12	0.09	0.35	0.38	0.39	0.44		0.29	0.51	0.44	0.39	0.23	0.06	-0.17	0.19
B1	0.18	0.17	0.26	0.27	0.35	0.00	0.25	0.39	0.18	0.10	0.16	0.27	0.27	0.29		0.39	0.35	0.07	0.18	0.19	-0.16	0.00
B2	0.42	0.43	0.50	0.44	0.61	0.19	0.36	0.20	0.25	0.31	0.28	0.39	0.40	0.51	0.39		0.54	0.24	0.09	0.10	-0.18	0.16
B3	0.24	0.20	0.44	0.30	0.37	0.21	0.38	0.19	0.20	0.15	0.25	0.43	0.34	0.44	0.35	0.54		0.31	0.09	0.03	0.06	0.23
B4	0.41	0.35	0.32	0.26	0.27	0.12	0.18	0.02	0.10	0.10	0.25	0.22	0.22	0.39	0.07	0.24	0.31		0.24	0.17	0.24	0.16
EF1	0.25	0.16	0.03	0.22	0.17	0.04	0.10	-0.01	-0.01	0.02	0.17	0.18	0.15	0.23	0.18	0.09	0.09	0.24		0.16	0.11	0.07
EF2	0.28	0.26	0.11	0.09	0.18	-0.10	0.06	-0.10	-0.06	0.20	0.21	0.16	0.12	0.06	0.19	0.10	0.03	0.17	0.16		0.15	0.49
EF3	0.12	0.13	0.04	-0.12	-0.11	0.08	0.04	-0.05	-0.02	0.04	0.10	-0.03	-0.04	-0.17	-0.16	-0.18	0.06	0.24	0.11	0.15		0.26
EF4	0.48	0.38	0.31	0.20	0.30	0.03	0.14	-0.02	0.01	0.19	0.41	0.36	0.20	0.19	0.00	0.16	0.23	0.16	0.07	0.49	0.26	

L=Leadership and mgmt, M=Membership, C=Communication, B=Benefits and EF=External Factors

The data was transformed to a new set of variables, the principal components (PC); these PCs are new non observed variables that capture the most variance of the data observed in the original items. The number resulting from the PCA was determined by the eigenvalues of each PC (table 27). These eigenvalues show the amount of variance captured by each PC and vary from 0 to any positive value. Since the greater the eigenvalue, the greater the variance explained by the PC; PCs 1 and 2 were selected.

Table 27 Eigenvalues of the correlation matrix from the PCA

Prin	Eigenvalue	Difference	Proportion	Cumulative
1	7.03562097	4.92943113	0.3198	0.3198
2	2.10618984	0.64457118	0.0957	0.4155
3	1.46161867	0.20965983	0.0664	0.4820
4	1.25195883	0.01163383	0.0569	0.5389
5	1.24032500	0.16380656	0.0564	0.5953
6	1.07651845	0.03994216	0.0489	0.6442
7	1.03657629	0.06202476	0.0471	0.6913

The interpretation of the underlying structure of each of the PCs was addressed based on the component loading resulting from the PCA (table 28). Component loadings indicate the strength and direction of the relationship between an item and a principal component. Hence, the greater the component loading of an item the more the item adds to the interpretation of a PC. According to Meyer (2006), component loadings with an absolute value greater than 0.4 are considered to be determined for interpreting their related PC.

Table 28 Eigenvectors for principal component 1 and principal component 2

		Prin1	Prin2
L1	L1	0.293425	0.203690
L2	L2	0.289326	0.107794
L3	L3	0.266467	0.068618
L4	L4	0.247617	-.116205
L5	L5	0.294309	-.068422
M1	M1	0.146036	-.210687
M2	M2	0.265888	-.151573
M3	M3	0.154864	-.353808
M4	M4	0.141235	-.237716
M5	M5	0.156177	0.125732
C1	C1	0.202088	0.233031
C2	C2	0.272697	-.023746
C3	C3	0.256095	-.100610
C4	C4	0.235349	-.045953
B1	B1	0.161380	-.196068
B2	B2	0.259161	-.128592
B3	B3	0.216114	-.091060
B4	B4	0.169756	0.199126
EF1	EF1	0.096729	0.139154
EF2	EF2	0.098072	0.409443
EF3	EF3	0.008952	0.350329
EF4	EF4	0.164162	0.423529

The component loadings indicated the relationship between each factor and a principal component. A component loading with a higher value (greater than 0.4 are considered to be determined for interpreting their related PC) indicated that an item was strongly related to a

principal component. It can be seen on table 28 that Prin 1 had a stronger relationship with the factors included in the category of leadership and management, the category of communication, the factors M2 (participation on GA), B2 (satisfaction on services) and B3 (benefits for the community). However these values are below 0.4 (considered to be determined for interpreting their related PC). Prin 2 had a stronger relationship (being above 0.4) with the factors EF2 (support from government) and EF4 (coops as development plan for Mex).

A scatter plot for principal component 1 vs principal component 2 by cooperative (figure 18) was elaborated in order to analyse the relationship between the cooperatives and the principal components.

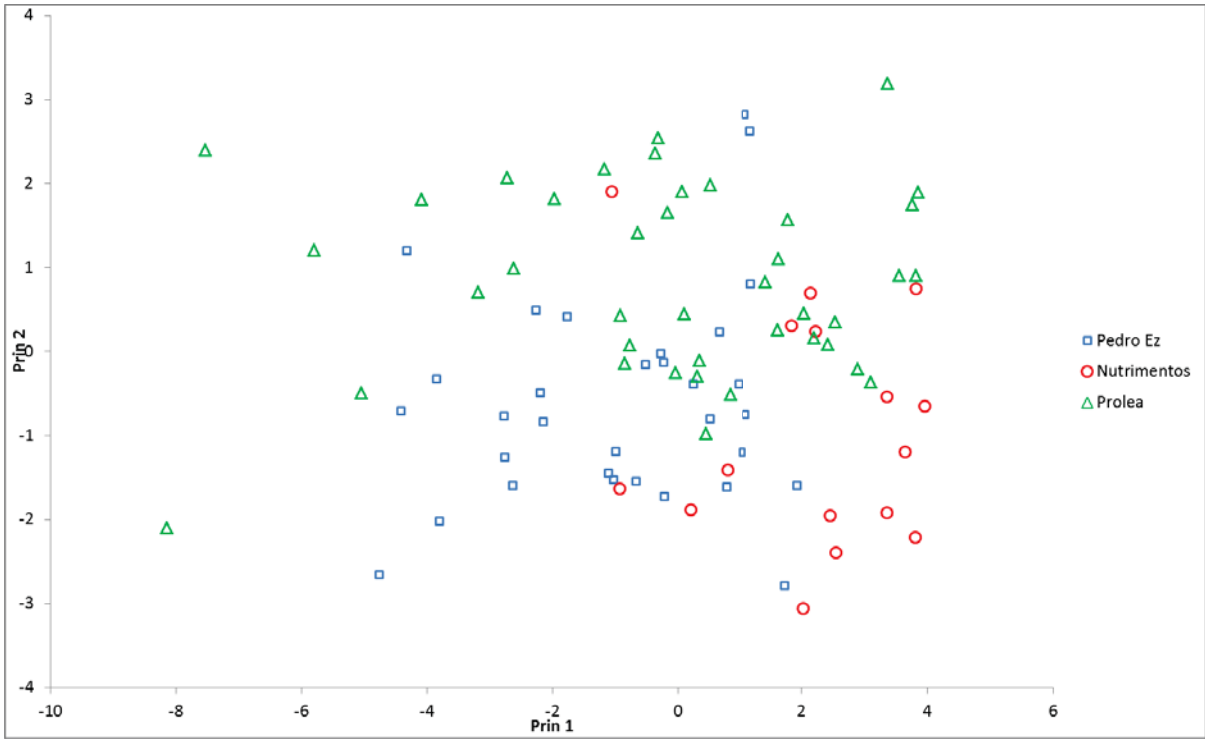

Figure 18 Scatter plot for principal component 1 vs principal component 2 by cooperative

It can be seen on figure 18 that the scatter plot shows how cooperative Nutrimentos had a stronger relationship with Prin 1, it can also be noted that these values are negatively correlated with Prin 2. As presented on table 28, Prin 1 had a stronger relationship with the factors included in the category of leadership and management, the category of communication, the factors M2 (participation on GA), B2 (satisfaction on services) and B3 (benefits for the community). However, these values are below 0.4 (considered to be determined for interpreting their related PC).

The graph also revealed that Prolea presented higher values for Prin 2. As presened on table 28, Prin 2 had a stronger relationship (being above 0.4) with the factors EF2 (support from government) and EF4 (coops as development plan for Mex).

These results confirm the previous results seen on the cluster analysis and ANOVA, where Nutrimentos showed stronger perception for the factors in the first four categories (leadership and management, membership, communication and benefits) and Prolea showed stronger perception for external factors, especially government support. Pedro Ezqueda presented not a clear relationship with any of the PCs as a cooperative.

Chapter 7

7 Discussion

The discussion in this chapter considers the key factors for cooperative success through the lens of experts and top management of the three cooperatives studied (qualitative results) and of farmer cooperative members (quantitative results). The factors have been classified into five categories, identified in the literature: leadership and management, membership, communication, benefits and external factors.

7.1 Leadership and management

7.1.1 Leader's transparency, knowledge and skills

The results of this study revealed that the leaders from the three cooperatives studied provide strong leadership with vision, a positive and serviceable attitude, time commitment, open communication and transparency.

The president of Prolea, also the president of UCCA, is one of the main leaders and promoters of cooperatives in Jalisco. He has been leading Prolea for more than 27 years. His vision, experience and knowledge have helped Prolea become the largest farmer cooperative in the region.

The current president of Pedro Ezqueda has been in the position for one year and is perceived as knowledgeable in feed concentrate production and farming but with limited experience leading a cooperative. Despite his limited experience leading a cooperative, he has been able to show his vision and commitment to the members of the cooperative.

Nutrimento's leader operates as a manager and president at the same time; he leads the cooperative with strong transparency and honesty, having high levels of trust from the cooperative members. He has been in the position for more than 10 years, showing good capabilities regarding feed concentrate production and cooperative business and delivering high member satisfaction.

The results from the survey indicated that the majority of the respondents, members of the cooperatives, had a positive perspective of the capabilities of their leadership and management.

The category of leadership and management was ranked second highest in the survey. The participants perceived the factors into this category as strong in their cooperatives.

The factors relating to a leader's positive impact and leader's understanding on dairy industry were ranked second and third respectively, being perceived strong by members. Most of the members strongly agreed (49%) and agreed (32%) that their leader had a good understanding of cooperative business, with only 6% disagreeing with this statement. In terms of the dairy industry understanding of their leader, members also had a positive response, 43% strongly agreed, 40% agreed and only 3% disagreed. Members believed that their leader had a positive impact on the development of their cooperative having 43% strongly agreeing, 42% agreeing and only 3% disagreeing.

Nutrimentos cooperative members perceive their leader more positively than the other cooperatives. They stand out with higher mean scores (13% above average) compared to the other two. Pedro Ezqueda presents lower mean scores (6% below average) mainly because the leader and president of the cooperative is new, being in the position for less than a year. Despite his limited experience, he is perceived as a talented, honest and knowledgeable individual but with limited experience in cooperative business.

The results from experts and top management revealed that even though the three cooperatives studied have different sizes (members and volume of feed production), the leaders managing the cooperatives have some common characteristics. The leaders from Prolea and Nutrimentos are farmers with experience in the agriculture industry and governing the cooperative. The leader from Pedro Ezqueda is younger with less experience in cooperative business but he is an experienced farmer with knowledge of the industry. They are experienced and knowledgeable individuals that manage their own farms.

The three leaders have their own farms and deal with the difficulties faced in the region. According to the qualitative results, they share a vision for the future of their cooperative and they inspire prosperity within the cooperative. They have a serviceable attitude for their cooperatives, obtaining the respect and trust from the rest of the members. The results from both sources, top management and members, show that leaders are recognised by their members to be

knowledgeable in cooperative business, production of feeds and dairy production, leading the cooperative with transparency and honesty and, therefore, creating trust from members.

The literature revealed that strong central coordinators enable a group to save on both total transaction information transmission and decision-making costs (Williamson, 1983). In addition, in coordination processes, leadership as a form of hierarchy helps to coordinate member actions, therefore, lowering bargaining costs that players would have to spend to agree on implementing the strategies (Miller, 1992). The willingness of a leader to commit vision, time, honesty and open communication are a key factors for success (Johnson, 1995). The study showed how these leaders took key roles in their cooperatives therefore contributing to the success of them: saving costs on transacting information; lowering bargaining costs and decision making by coordinating efficiently; providing management capacity and knowledge on cooperatives business; providing experience and a vision.

In contrast, the view from experts and top management revealed that some cooperative members do not have enough trust and confidence in some members in the management and governance of their cooperative. This is mainly because members with higher participation and larger farms take responsibilities as directors, making the policies and being more dominant in the cooperative. Nilsson et al. (2009) states that trust is essential in a cooperative as it reduces behavioural uncertainty to the extent that it can act as a control mechanism that reduces the opportunistic behaviour of managers. Similarly, Arcas and Hernandez (2003) stated that it is to be expected that members that trust their cooperative will perceive that the decisions of their cooperative will allow them to achieve their objectives; this, in turn, will stimulate members to feel confident and satisfied with the cooperative.

Prolea and Pedro Ezqueda have a hired management team to operate the cooperative. According to the view of experts and top management, this separation between ownership and management has caused problems with the decisions made by these individuals. The qualitative results showed that some members do not entirely trust these managers as agents and do not consider them to understand the needs of members. There is a perception that they do not look after the benefits for members and wealth for the cooperative, causing an agency problem. The literature revealed that the agency problem emerges mainly in organisations with separation between

ownership and management. They happen when the actions of the managers affect member wealth (Fama & Jensen, 1983). The agency theory matters in that the owners, as residual right holders, can prevent other stakeholders from being dishonest (Nilsson, 2001).

Another issue identified with leaders in the qualitative results is that the three cooperatives have not shown a clear succession plan. They have not worked on ensuring that the coming generation participates more in the cooperatives, enhancing their strength and ensuring the success of the future of the cooperatives. Poor succession planning limits the future success of cooperatives. According to the literature, the integration of young people into cooperatives and developing their leadership and management skills is essential for success (Mellor, 2009).

7.1.2 Governance

The study revealed that the governance structure of these cooperatives are all similar based on the GLCS (1994). In accordance with the GLCS, the governance structure of these cooperatives includes a general assembly, board of directors and supervisory committee.

The general assembly has the cooperative principle of one member one vote. In order to maintain transparency within the cooperative, clear communication providing the most relevant information has helped to build a relationship of trust between the board of directors, management and their members.

The board of directors make sure that management execute the plans and decisions with prudence, using all resources to provide services for the members. In order to prevent conflicts, the board of directors present all relevant information to the members, especially financial information. The results showed that in order to guarantee accountability and transparency, the supervisory committee monitored the board of directors and management team.

The view from experts and top management showed that, across the three cooperatives, governance with clear structure, well-formed according to the law has been a key factor for success. In relation to governance, literature showed that the main objectives of governance in cooperatives are to provide: a balanced effective control by the users-members-owners over important decisions of the cooperative; mechanisms of internal and external monitoring; and enough management prudence to run the cooperative (Bijman et al., 2014). These are objectives

that the three cooperatives studied followed. Additionally, it was evident that an informed governing structure is important for the success of cooperatives (Chaddad & Cook, 2004).

7.1.3 Management

The cooperative management teams have been able to achieve their targets with good results, having consistent growth mainly in their volume of feed production.

The results from experts and top management showed that the cooperatives reported financial results clearly to their members, increasing member satisfaction with the information presented; this is an important factor that has generated trust among its members. The literature showed that it is to be expected that members that trust their management team will perceive that the decisions of their cooperative will allow them to achieve their objectives, stimulating members to feel confident and satisfied with the cooperative (Arcas & Hernandez, 2003).

The results from the survey revealed that most of the participants are pleased with the running of the cooperative as a business (45% strongly agree) and how the cooperative invests equity capital (42% strongly agree). Some members showed some levels of dissatisfaction with 9% disagreeing with the running of the cooperative as a business and 5% disagreeing on how the cooperative invests equity capital.

In all three cooperatives studied, the qualitative results showed that the management team is formed by educated people with experience in the industry and skills to manage cooperatives. They are mainly dedicated to providing agricultural services and, in particular, providing good quality feed concentrates. According to Sexton and Iskow (1988), the simplest way to achieve good management is to hire professional management with specific expertise, if possible, in the relevant industry.

The management team is supervised by the board of directors and supervisory committee. This created a transparent environment for the members generating member satisfaction, and thereby, increasing loyalty to the cooperatives. The literature showed that business acquaintances and efficient management not only adds to the success of a cooperative (Bruynis et al., 2001), but also determines how successful the cooperative performs as a business enterprise (Sexton & Iskow, 1988).

7.2 Membership

7.2.1 Member knowledge, identity and commitment

The results from experts and top management revealed that member skills in farming and production are an important factor for the success of their cooperative. Better knowledge, understanding and skills related to their farming activity helped farmers obtain better quality products, leading to an improvement in income.

Experts and top management also noted that one of the main reasons why many members have been able to survive is because of their sturdiness and passion for the activity of farming. People in Jalisco are perceived as passionate about dairy farming and they have been sturdy farmers surviving through difficult seasons, whilst living and maintaining their families on very low budgets.

The members who are the users and owners of the cooperative contribute to its success. The literature showed that the awareness, willingness to participate, knowledge and skills of members relating to the industry are fundamental for successful cooperatives (Liu, 2010).

The view of experts and top management also showed that members of these cooperatives trusted their cooperative by participating in the general assemblies, supporting the decisions made by the cooperative, and thereby, stimulating confidence and satisfaction with their cooperative.

Members in general, have high participation in the general assembly. The results from the survey showed: 75% strongly agreed with participation in the general assembly; 43% strongly agreed that their suggestions in the general assembly are taken into account.

The participants from the survey considered the factors related to membership as the most important in the success of their cooperatives. In the perception of the members, the factor relating to member participation in assemblies was ranked fifth strongest. According to Hernandez (2013), member satisfaction is crucial to increase participation; their confidence on how the cooperative operates generates trust and a better relationship and communication between management and members, leading to successful results for the cooperative. Members that trust their cooperative perceive that the decisions of their cooperative will allow them to

achieve their objectives, stimulating members to feel confident and satisfied with their cooperative (Arcas & Hernandez, 2003).

The view from the members revealed that most of them have experience in the industry and in the cooperative. The survey showed that members have in average more than 28 years of experience in the industry and more than 16 years of experience as cooperative members. These results showed that farmers of these cooperatives have experience working in faming activities and also experience participating within a cooperative. Therefore, it can be seen that these are members who have previous established business relationships, this being a factor for success of cooperatives. According to the literature, members having previous business relationships between them are expected to have a positive impact (Banaszak, 2008). Previous cooperative experience has a positive impact on the likelihood of successful cooperatives (Bruynis et al., 2001).

The results from the survey also revealed that members from certain groups have a homogenous perception for the factors measured. The participants were clustered in different groups to analyse if there was any difference between the means for each category (leadership and management, membership, communication, benefits and external factors) for different clusters. The data was analysed in three groups: level of milk production; level of education; and cooperatives.

The results revealed that there is no statistically significant difference ($P > 0.05$) for the means between levels of production for each category. High producers and low producers showed no difference in perception for each category. The same results were observed for education levels with no statistically significant difference ($P > 0.05$) observed for the means for each category.

The participants grouped by cooperative were the only ones to present a statistically significant difference ($P < 0.05$) for the means for each category. Nutrimentos had higher means for the first four categories (leadership and management, membership, communication and benefits) and Prolea had higher means for external factors.

The three cooperatives studied have in general homogenous type of members, with most being dedicated to dairy production. Hansmann (1996) stated that member homogeneity of any kind implies that members will have more interests in common and this is an essential factor for

successful cooperation. Banaszak (2008) mentioned on his results that homogeneity is a factor for success of a cooperative.

On the other hand, results from the survey showed that there is an important difference between the sizes of some of the farms owned by members in the three cooperatives studied. There are farmers with 10 cows and others with more than 300 cows; this variation creates different needs in relation to services and type of concentrates, causing some decision making problems between members.

The results from experts and management showed that the difference in size generates different needs in terms of level of input for their farms, considering the level of production of their cows and the different quality of concentrate they need. The levels of production also vary; some farmers produce 15 litres per cow per day and some produce 30 litres. This condition also created different service needs from the cooperative. According to the literature, opposing interests between members and the engagement in internal lobbying to promote selfish interests increases influence costs in a cooperative organisation (Borgen, 2004). Hansmann (1996) argues that member homogeneity of any kind implies that members will have more interests in common and is an essential factor for successful cooperation.

Another limiting factor revealed in the survey is that most of the members do not have professional education, with only 8% having been to university or engaged in alternative further study. Experts and top management noted that there was a lack of farm management skills amongst members with most only focused on production without considering the farm in terms of whole farm business. According to Liu (2010), the knowledge and skills of members relating to the industry are fundamental for successful cooperatives.

Top management noted that the Jalisco farmers are getting old and the younger generations are not getting involved in the farming industry. The average age of members is 52. The region of Los Altos, Jalisco lacks young people interested in the activity of farming and therefore participating in the cooperatives. The integration of young people into cooperatives and developing their skills is essential for success (Mellor, 2009).

Another challenge revealed by experts and top management was that the concept of the cooperative movement is not entirely understood by some members. In fact, they indicated that

members have not made full use of the potential of the cooperative force to totally improve their channels of commercialisation or add value to their products.

It can be noted from the survey results that members perceive themselves as not knowledgeable about cooperative business; 39% neither agreed nor disagreed, 25% agreed and 17% disagreed. Their perception of their skills and knowledge of the dairy industry was stronger; 41% agreed, 28% neither agreed nor disagreed; and only 2% disagreed. It is interesting to note that most of the members have many years of experience but the results show high variation of their own perception of the knowledge of the industry and cooperatives.

The members of Nutrimentos seem to be more optimistic and considered themselves more skilful and knowledgeable on cooperative business (24% higher than average) and dairy industry (12% higher than average).

Cooperatives are defined by the GLCS (1994) as "an organisation based on common interests and the principles of solidarity, self-help and mutual aid, in order to meet individual and collective needs, through the economic activities of production, distribution and consumption of goods and services" (DOF, 1994, p. 1). However, according to the qualitative results, some members only participate in cooperatives to obtain collective goods such as feed without following the cooperative principles of solidarity, self-help and mutual aid mentioned by the Mexican law.

In a situation of free-riding Cook (1995), Nutrimentos added 54 new members into the cooperative without paying any titles or shares compared to the original members who had to pay a contribution in order to be part of the cooperative. They were given one title for free, participating only with their consumption. This condition generated a free-rider problem; some members who made only a small or non-capital investment in the cooperative are still gaining similar benefits to the members who have made a major investment (Cook, 1995).

7.2.2 Number and continuity of members

Prolea and Pedro Ezqueda were the two largest cooperatives from UCCA, having more members than the rest of the cooperatives in the region and, therefore, being able to capture economies of scale. According to the information provided by UCCA, these two cooperatives buy more grain than the rest of the cooperatives. According to the literature, the more members the cooperative

attracts, the greater its output level will be and the more able it will be to capture economies of scale (Sexton & Iskow, 1988). The number of members has an indeterminate impact on the likelihood of achieving success (Banaszak, 2008).

Even though Prolea and Pedro Ezqueda have had volatile growth with members coming in and out for the last four years, they still have more members than the rest of the cooperatives in the region and by consequence more business. This had helped increase competitiveness and benefits to members. Nutrimentos is a medium sized cooperative in the region with 166 members but has not had considerable growth in membership, only 14% since it was created. In volume of purchase though, it is still in the top three of the UCCA.

The literature revealed that growth in membership indicates that a cooperative is a business success through the word being spread that the cooperative provides a desirable service on a competitive basis. More members also mean more business, which spreads out overheads, increases competitiveness and benefits to members (Mellor, 2009). According to Menard (2006), the level of transaction costs can be decreased by increasing the frequency of transactions; the more frequently transactions takes place, the lower the fixed costs per unit.

In addition, large membership and sales volume enhances the reliability of product flow. Reliability of supply is a critical factor in establishing a marketing network with buyers preferring reliable suppliers and paying premium prices (Sexton & Iskow, 1988).

Member continuity was ranked as the strongest success factor of all in the perception of these members. They showed that they were convinced to stay in the cooperative for an extended period of time. Members in general, are willing to stay in the cooperative. The results from the survey showed that 89% strongly agreed to stay in their cooperative for the next five years.

According to the view of experts and top management, the three cooperatives studied have been successful as they have been able to attract enough membership volume to generate sufficient business volume on feed production and sufficient equity financing in order to survive and keep operating. The smaller cooperatives in the region have failed, struggling with limited membership, thereby being unable to generate a sufficient volume of production. Despite the fact

that they are born of necessity, accessibility to feed concentrate, their scale has limited their development and, therefore, success. According to Sexton & Iskow (1998), even if cooperatives are born of a necessity, they may fail if they lack sufficient membership and volume. They state that the two most important causes of failure among cooperatives are insufficient membership and, hence, insufficient business volume and insufficient equity financing.

7.3 Communication

7.3.1 Effective, transparent and trustful communication

Experts and top management from the three cooperatives considered that communication between members and management was good and effective. According to these results, the cooperatives studied have been able to generate transparent communication and participation from their members, supporting the objectives of their cooperatives. The literature showed that the more information and control a member has about his cooperative, the more satisfied he will be with it (Arcas et al., 2014). Also, Liu (2010) explains how communication between members and management is important for the successful development of cooperatives.

These cooperatives showed transparent communication between management and their members, with high participation at the assemblies, support from their members of cooperative objectives and, consequently, high levels of trust in their cooperatives. According to Nilsson et al. (2009) trust is essential in a cooperative, reducing behavioural uncertainty to the extent that it can act as a control mechanism that reduces the opportunistic behaviour of managers. Trust is also a mechanism of agricultural cooperatives than mitigates agency problems (Borgen, 2001).

The cooperatives studied share important information with members. As an example, Pedro Ezqueda had screens at their payment counter showing members relevant information about new plans for the cooperative, results and information about the grain and dairy market. Cooperatives have information which members do not have, for example information relating to market prices and client behaviour (Borgen, 2001).

According to the literature, members that have information about the cooperative and mechanisms of control may assist in the prevention of opportunistic behaviour of members of the board of directors and professional managers, so that their decisions help achieve cooperative objectives (Arcas et al., 2014). Communication in cooperatives allows group members to make

explicit commitments and promises about their future moves and to appeal to the "right" or "proper" thing to do. Communication also increases the observability of others' actions and decrease the attractiveness of cheating (Banaszak, 2008).

On the other hand, some challenges related to communication were revealed in this study. Experts and top management noted that some conflicts and problems that have arisen with the cooperatives studied related to some members' lack of commitment, interest in participation and being informed about the cooperative. They said some members feel that their opinion is not taken into account and have had misunderstandings and poor communication with management and governing board. Some members feel that the decisions are taken just by a minority group. According to Cook (1995), the lack of commitment and communication with the cooperative from some members creates control problems. This normally occurs by incomplete information being given out and, therefore, misunderstandings occurring between members and governing boards and management.

Experts also noted that cooperative members from Jalisco are considered individualistic with lack of trust evident between each other; this is one of the main obstacles to communication and working collectively. This is in contrast to the literature finding that communication among members is expected to have a positive impact on the likelihood of succeeding (Banaszak, 2008).

In contrast to this view, the member perception is not consistent with either the experts or each other, showing high variation. The results revealed that 43% of members agreed that the communication among members is strong, 25% strongly agreed, 24% neither agreed nor disagreed and only 7% disagreed

Even though experts and top management perceived good and effective communication among members and with the cooperative, the results from the survey showed that there is variation in the perception of communication in the cooperatives. The communication category was, in fact, ranked fourth in the survey. The factors in this category were perceived weakly by the participants.

Despite members highly recognising that management always explained decisions, members seem to be not informed or interested on the results and plans of their cooperative. The survey

showed that 30% neither agreed nor disagreed on being informed about the strategies of their cooperative, 26% agreed and 25% strongly agreed. Also, 34% agreed that they were informed about the results of their cooperative and 25% neither agreed nor disagreed. It is interesting to note that 39% strongly agreed that management always explained decisions about the cooperative to members.

Nutrimentos had higher mean scores than the other two cooperatives for the communication category (18% above average). The members of this cooperative seemed to be better informed and interested about the plans and results of their cooperative and had better communication among members. Nutrimentos, being a smaller cooperative showed more control and better communication, compared to the other two cooperatives. According to the literature, Nilsson et al., (2009) explains that when a cooperative becomes larger and develops complex business operations, the members are no longer able to control the cooperative and they have difficulty keeping themselves informed about the business and assessing what is happening in the firm. They reason that this obstructs the participation of the partners in the governance of the cooperative creating dissatisfaction. As the cooperatives grow in size or volume of production, confusion between members and management may occur and may generate some control problems.

7.4 Benefits

7.4.1 Member satisfaction

The three cooperatives studied work on satisfying their members' needs by providing benefits such as specific requirements on feed concentrates, quality and low prices, not available elsewhere. Experts and top management revealed that their members are satisfied surviving as a functioning organisation and achieving this mainly by leveraging their collective bargaining power through the cooperative.

Prolea has been able to provide more services than the other two cooperatives, achieving good quality standards and satisfying different member needs including: calf rearing; health services; agricultural services and consultancy; loans; distribution of milk; and processing of own branded milk. The benefits provided are in excess of what is available elsewhere, satisfying the needs of their members (Sexton & Iskow, 1988) and helping with the development of their community.

One priority these three cooperatives have in common is to provide products that satisfy the needs of their members. Considering what members as farmers need, these cooperatives work on formulating the best concentrates with the best quality and at the best price. According to literature, cooperatives are created to serve members and operate for their benefit. Members are satisfied with their cooperative when the cooperative is perceived to act in their interests (Ortmann & King, 2007). According to Sexton and Iskow (1988), since cooperatives are voluntary organisations, they only succeed if they provide benefits to their members in excess of what is available elsewhere.

Interestingly, members have a diversified perception about the price of concentrate. This satisfaction factor was ranked as the third weakest as perceived by members. Members showed through the survey results 40% strongly agreed they were satisfied with the price of feed concentrate, 25% agreed and 11% strongly disagreed. Members are aware that they receive a better price participating with the cooperative although there are still some members that think that the price could be improved. However, members are satisfied with the services that the cooperative provided to help their business with 55% agreeing, 31% strongly agreeing and only 5% disagreeing.

According to the literature, cooperatives need to offer quality services and products at fair prices. Otherwise, few people will be inclined to become a customer first and subsequently take the step to become or remain as a member (Wise & Rakocy, 2010). In addition, members are satisfied with their cooperative when the cooperative is perceived to act in their interests (Ortmann & King, 2007).

These members have a positive perception on how their cooperative provides social benefits, helping the community develop and have more sustainable growth. The results from the survey showed that members perceive that their cooperative helps improve the livelihood in the community with 43% strongly agreeing, 38% agreeing and only 3% disagreeing.

The benefit category ranked third in the survey. The level of perception relating to these factors varied and seemed ambiguous for members. Even though overall this category had high levels of variation, the factor relating to benefits for the community was ranked as the fourth strongest factor of all. The benefit that members perceive strongly in their cooperative is how the

cooperative helps improve the livelihood of the community. Nutrimentos, like in most of the categories had higher level of satisfaction of the benefits offered by its cooperative, having mean scores 12% above average.

According to the literature, the members' satisfaction from belonging to a cooperative is an appropriate measure of the success of the member-cooperative relationship; this measure supports the aim of members to stay in the cooperative and, hence, the success of the cooperative. The interest in maintaining a relationship and satisfaction have a significant and positive relationship (Hernandez, Arcas, et al., 2013).

Satisfaction influences the desire to continue as a cooperative member and, thus, the success of the cooperative as a functioning organisation (Hernandez, Arcas, et al., 2013). Although the intention of a cooperative is intended to make a profit for its members, cooperatives also have non-economic objectives like long term goals relating to sustainable economic growth and social development, beyond mere maximisation of short term profit (ICA, 2014a).

On the other hand, the differences between membership size has generated some heterogeneous needs of particular benefits and services. There are different needs in terms of their level of input for their farms, considering the level of production of their cows and the different quality of concentrate some members might need. This has left some members without benefit or service that really satisfies them as a member.

Another issue revealed is that the three cooperatives studied have mostly reinvested their profit into infrastructure for their cooperatives; members have not received the benefit and advantage of rebates even though they as members own the cooperative. The benefits that they receive are the services from the cooperative, as well as the quality and low cost of concentrates. This situation has generated some discontent for some members. Cooperatives have advantages compared to other type of businesses; one of these advantages is to give rebates to members (MED, 2015).

7.4.2 Training for cooperative members

The results revealed that the top management of the three cooperatives studied are aware of the importance of providing training in relation to cooperative business. Prolea has the strongest training programme, providing their members training on management and farming production.

This cooperative is clear that improving the productive and technical skills of their members has an impact for their success. Prolea is the only cooperative that has a formal training programme, having their members convinced that this training leads to better results.

Nutrimentos and Pedro Ezqueda, due to lack of interest from members, do not offer much training on cooperative business principles. This is in contrast to the literature findings that training for members in both technical and cooperative knowledge is a benefit that leads cooperatives to develop successfully (Liu, 2010). Training helps members obtain a better understanding of cooperatives, creating more involvement from members and, therefore, successful results for the cooperative. The understanding of cooperative business and knowledge and skills on farming from members has shown to be important for the success of cooperatives. The ICA (2011) establishes this as one of its seven cooperative principles: education, training and information.

Experts and top management argued that balance between cooperative business training and production farming training is important for their success. The challenge for management has been the ability to effectively communicate these concepts to their members, without overcomplicating the subjects covered and thereby making them attractive for members. Even though this has been challenging, Prolea has achieved good participation from their members in their training programmes.

A related issue revealed by experts and top management was that despite training and education being an important factor for success, there has been lack enthusiasm in attending the training programmes. Nutrimentos does not have a proper training programme and Pedro Ezqueda has some random training for their members with only Prolea offering a more formal training programme for members.

The study revealed that it has been challenging to get good participation from members on the training provided. Even though members know and consider it important to improve their productive capabilities, the training provided has not generated much interest for them. The results from the survey reflected this showed that perceived benefit of training and education was diversified with 44% agreeing, 19% strongly agreeing but 15% in disagreement. The programmes on training and education are not well established and the participation from

members has been inconsistent. The factor of training for members was ranked as the fourth weakest in the survey.

Education, training and information, as one of the ICA cooperative principles, has been considered as a relevant factor for the success of cooperatives. Training for members on both technical and cooperative knowledge is a benefit that leads cooperatives to develop successfully (Liu, 2010).

7.5 External factors

7.5.1 Government support

The view of experts and top management revealed that government programmes and policies provided valuable resources in the success of Prolea. The other two cooperatives have been more limited obtaining and managing resources from the government. Even though the government has programmes and resources to help famers and cooperatives, it has been challenging for most of the cooperatives, like Nutrimentos and Pedro Ezqueda, to get access to these programmes. Consequently, according to experts and top managers, easier and efficient access to government legal and financial support is an important factor for the success of famer cooperatives. This reflects findings in the literature which highlights government programmes and policies having an important effect on the prosperity and structure of agriculture cooperatives (Sargent, 1982). Nearly 30 years later, Liu (2010) found the same stating favourable polices and legislation is fundamental for successful cooperative establishment and development (Liu, 2010).

Top management and experts also revealed that in order to succeed, cooperatives have to face challenges and problems beyond and within cooperatives. Therefore, in order to enable cooperatives to succeed, these organisations have to adapt to the external implications and environments in which they operate and at the same time, maintain their cooperative principles and features. They argued that the government needs to support the development of cooperatives more by finding a proper approach; fostering, guiding and helping cooperatives achieve successful results.

The qualitative results showed that the cooperatives studied and dairy industry in Mexico have no real support from the government; experts in the region argued that there are no public policies that regulate the sector. Without a clear public policy, they reasoned that there is no

clear idea of what the government wants for its milk industry and cooperatives. Therefore, they stated that more support is needed from the government in order to guarantee farmers and cooperatives a sustainable future.

Members of cooperatives in Jalisco perceived external factors as elements that strongly affect their success. The category of external factors was the weakest in the perception of the members. The current situation of the dairy industry was perceived as highly unfavourable by members. The results from the survey showed that 48% strongly disagreed that the current situation of the dairy industry provided a favourable environment for the development of their business with a further 27% disagreeing and 17% neither agreeing or disagreeing. Members especially disagreed on the price paid for their milk. The factor relating to the impact of the situation of the dairy industry was ranked as the weakest by member perception.

In terms of help provided by the government, 30% agreed that the programmes from the government had been appropriate for the development of their cooperative; 25% neither agreed nor disagreed and 17% disagreed. The respondents mostly disagreed on receiving support from NGOs with 44% neither agreeing or disagreeing and 25% disagreeing or strongly disagreeing. The factor of support from government was the second weakest factor by member perception.

The perception of the government as including the cooperative movement as part of its national development plan seems ambiguous for members; 32% neither agreed nor disagreed, 26% agreed and 23% disagreed. The factor of cooperatives as development plan for Mexico was ranked fourth weakest by member perception.

According to the qualitative results, the government programmes and support from NGOs are perceived as poor, except for Prolea where its members perceived more support from the government. In this category, Prolea had the highest mean scores, being 12% above the average compared to the other two cooperatives.

The literature revealed that oftentimes, cooperatives have to face challenging and poor enabling environments caused by restrictive legislation or, in some cases, the nonexistence of a cooperative law. Thus, cooperative laws have a significant role in promoting and fostering cooperative development in each country (FAO, 2012). Cooperatives need regulation in order to function properly, protecting democratic member control and ownership, the autonomy and

voluntary nature of the organisation as well as the open membership (ICA, 2014a). An enabling legislation is a key ingredient for a successful and healthy expansion of cooperatives (Groeneveld, 2015).

7.5.2 Market competition

Members of these cooperatives face challenging market competition with dairy products. In Mexico, there are multinational companies (Unilever, Nestle and Danone) making products from dairy ingredients. These companies make products such as cheeses and yogurts with dairy ingredients such as dairy whey, competing with products with only milk.

There has been no regulation on this matter and for this reason; farmer cooperatives in Jalisco argued that there is unfair competition between real dairy products and products with other dairy ingredients, such as milk formulas and chesses. The cost of production and quality are not the same and the latter products have less quality and lower nutritional value and also are cheaper. This scheme of competition creates a complicated situation for products made from authentic milk, such as the products Prolea sells and products from Sello Rojo which is one of the main buyers of milk of these cooperatives.

According to the literature, cooperatives use the farmer collective action to overcome market barriers (Markelova et al., 2009). They also gain a stronger bargaining power in a local or regional market (Hendrikse, 2002). Although the development of activities such as processing or commercialisation increases the value added of their products, it requires significant investment, including equipment, installation or training of both members and employees (Chaddad & Cook, 2004; Nilsson, 2001).

Agricultural cooperatives have become a strategic instrument to accessing the market in direct competition with other companies and large agricultural multinationals. Cooperatives also integrate small farmers into the market, who are subordinated to the decisions of the large producers that form the social base and the administrative structure of many agricultural cooperatives (Gomez, 2014).

Chapter 8

8 Conclusions

Cooperatives play an important role in the agriculture of Jalisco. Farmers in Jalisco have formed cooperatives to serve a variety of functions, but mainly to increase their bargaining power to buy feed input. These cooperatives grow the capacity of their members by obtaining benefits that help increase productivity in order to face regional dynamics in a global market economy. In Jalisco, there are primarily consumer cooperatives, whose main objective is to supply feed input to their members at the lowest possible cost.

Despite farmers having benefitted from cooperative membership, cooperatives are viewed by some members only as an instrument, meaning participation is limited to only obtaining collective goods, such as feed, or gaining access to projects and programmes, without a full understanding of cooperative principles. Most members do not follow the principles established by Mexican law which include such things as solidarity, self-help and mutual aid.

In addition, the Mexican government has excluded the cooperative movement by not providing enough programmes for support and removing it from national development plans. Despite this, in the region of Jalisco, farmer cooperatives have been established mainly to sell feed concentrates to members at a low price and to provide other agricultural services. These farmer cooperatives have been successful in the face of an increasingly competitive environment in Mexico, achieving this by leveraging the collective bargaining power of members via the cooperative union.

Few studies have been done about farmer cooperatives in Jalisco. Therefore, this study analyses factors that influence the success of farmer cooperatives in this state.

The research objective was addressed by using case studies and survey approaches as mixed methods. The literature review revealed that both qualitative and quantitative approaches have been used to analyse key factors in the success of cooperatives. Some qualitative studies on agricultural cooperatives include factors for successful development of farmer cooperatives in China, where Liu (2010) studied two farmer cooperatives using a case study approach. In

Chiapas, Mexico, Milford (2014) investigated with a qualitative study why different producers make different choices, looking at both material and immaterial costs and benefits of these two choices.

Quantitative studies on agricultural cooperatives include: Bruynis (2001) who analysed 27 variables as factors for success in the US; and Banaszak (2008) who worked with several variables to measure the success of agricultural cooperatives in Poland.

In this study, three farmer cooperatives from Jalisco were examined, Pedro Ezqueda, Nutrimentos and Prolea. These cooperatives were chosen as they have been successful in the state of Jalisco. The main elements of success used for selection were membership growth, longevity and volume of grain purchased from UCCA in 2015.

These cooperatives have been operating for many years and have seen growth in membership. Pedro Ezqueda grew from 25 to 423 members in 22 years, Nutrimentos grew from 145 to 166 members in 34 years and Prolea grew from 44 to 575 members in 24 years. These cooperatives were also the top three consumers of grain from UCCA in 2015.

Primary data was collected from face to face semi-structured and structured interviews. Participants for the semi-structured interviews were selected through purposive sampling, interviewing experts, managers, directors, leaders of cooperative associations and other key players of cooperatives. In purposive sampling, participants were selected based on their experience with cooperatives, including managers and key players who had an overall knowledge of cooperatives. Participants for the structured interviews were selected through a convenience sampling technique, interviewing members at the plants of the three cooperatives.

Secondary data included publicly available information such as documentation, academic journals, company reports, newspapers and web sites.

The literature review revealed that the key factors influencing the success of cooperatives include political, economic, social, management and governance ones. It was identified in the literature that factors such as: leadership and management; membership; communication; benefits; and external factors are key in the success of farmer cooperatives (Arcas et al., 2014; Banaszak, 2008; Bruynis et al., 2001; Liu, 2010; Sexton & Iskow, 1988). The present study

confirms these factors and identifies further factors that influence the success of farmer cooperatives in Jalisco, particularly.

8.1 Factors for success

These factors for success provide a view through the lens of experts and top management of the three cooperatives studied combined with members' perception of the success factors.

The key factors for the success of farmer cooperatives in Jalisco are leaders who have a positive and serviceable attitude, a transparent approach and are knowledgeable in both the business of cooperatives and the production of feeds. Leaders who have key roles in their cooperatives, and coordinate efficiently, providing management capacity as well as experience and vision while fortifying unity and generating respect and trust with cooperative members are also key.

Other key factors for the success of farmer cooperatives in Jalisco are professionally educated managers who are transparent, with experience in cooperatives and the feed industry. These managers who are vital to success are also proactive with the capacity to add value to the organisation and are dedicated to provide high quality services. They also work for the benefit of their members.

In relation to the cooperative members contributing to success in Jalisco, key factors include participation in general assemblies, trusting their cooperative, supporting the decisions made by management which, in turn, stimulates confidence and satisfaction with their cooperative. Additionally, not only having knowledge and understanding but also skills related to their farming activity lead members to obtaining better quality products, improving their income and contribution to the success of their cooperatives.

Being sturdy and passionate about farming has enabled Jalisco cooperative members to maintain farm operations through difficult seasons, surviving and continuing with their cooperatives. There is a continuous willingness from members to stay in their cooperative and a greater number of them show that the cooperatives provide desirable services.

Trusting and effective communication between members promotes support and belief in the objectives of the cooperatives, thereby increasing a sense of unity amongst members. Transparent communication between management and members increases participation at assemblies, increasing involvement and level of trust from members and, therefore, the overall success of farmer cooperatives.

Satisfying member needs by providing benefits such as specific requirements for feed concentrates, quality and low prices not available elsewhere and helping with the development of their community are further key factors for the success of farmer cooperatives in Jalisco. Satisfaction affects aspiration to remain a cooperative member and, thus, the success of the cooperative. Cooperative members are satisfied when gaining benefits and meeting interests, including sustainable economic growth and social development for their community, not only monetary profit.

Improving member understanding of cooperative business in addition to knowledge and skills relating to farming has a positive impact on the success of farmer cooperatives. Training helps members gain a better understanding of cooperative business, creating more involvement from members and, therefore, cooperative success. Communicating concepts that are valuable, suitable, productive and attractive for cooperative members, without overcomplicating the subjects covered, also contributes to the success of farmer cooperatives.

Active government involvement is imperative for farmer cooperative success. Such involvement includes cooperative promotion campaigns showing the benefits of farmer cooperatives, the implementation of policies and programmes supporting cooperatives and the creation of a favourable environment. Easier and efficient access to government financial support is an important factor for the success of famer cooperatives in Jalisco. Cooperatives require laws in order to function properly with democratic member control and ownership. An enabling legislation is a key factor for the development and success of farmer cooperatives.

This study revealed differences between the cooperatives studied. Prolea and Pedro Ezqueda were the two largest cooperatives from UCCA, having more members than the rest of the

cooperatives in the region and, therefore, being able to capture economies of scale. Even though Prolea and Pedro Ezqueda have had volatile growth with members coming in and out for the last four years, they still have more members than the rest of the cooperatives in the region and by consequence more business. This had helped increase competitiveness and benefits to members. Nutrimentos is a medium sized cooperative in the region with 166 members but has not had considerable growth in membership, only 14% since it was created. In volume of purchase though, it is still in the top three of the UCCA.

The differences between the cooperatives studied also showed that members of Nutrimentos had stronger more optimistic perception of the factors in the first four categories (leadership and management, membership, communication and benefits) and members of Prolea showed a stronger perception for external factors, especially government support. Government programmes and policies have provided valuable resources in the success of Prolea.

Additionally, Prolea has been able to provide more services than the other two cooperatives, achieving good quality standards and satisfying different member needs including: calf rearing; health services; agricultural services and consultancy; loans; distribution of milk; and processing of own branded milk.

Within a challenging and dynamic environment in Mexico, these factors have been identified as the factors relating to the success of farmer cooperatives. Consequently, these cooperatives show potential for development and growth. However, challenges stand in the way of their success.

8.2 Challenges for farmer cooperatives in Jalisco

This study revealed the key factors for success of farmer cooperatives in Jalisco with these cooperatives showing common issues with cooperatives presented in the literature. These issues included free-rider and control problems (Cook, 1995), decision making problems between members (Baldwin, 2001) and agency problems (Nilsson, 2001).

The study revealed the first challenge to be a need for better membership understanding of the concept of cooperative principles. Despite training and education being an important factor for success, there has been a lack of enthusiasm in attending the training programmes offered. Even

though members know and consider it important to improve their productive capabilities, the training provided has not generated much interest. A problem identified among members was that cooperative members from Jalisco are considered individualistic, with lack of trust between them being one of the main obstacles to communication and working collectively.

More challenges related to communication leading to conflicts and problems within the cooperatives studied were evident. These issues were due to some members' lack of commitment, interest in participation and being informed about the cooperative. Some members feel that their opinion is not taken into account, having misunderstandings and poor communication with management and governing boards. Some members feel that the decisions are taken just by a minority group.

Another challenge revealed was that cooperative members are getting old; the average age of members is 52. With the younger generation not entering the industry of farming, they are obviously not joining the existing cooperatives. Related to this, these cooperatives have not shown a clear succession plan. They have not worked on ensuring that the coming generation participates more in the cooperatives, enhancing their strengths and ensuring their success. Finally, there are no clear public policies that regulate the sector and no clarity of government desires for farmer cooperatives.

For these reasons, to positively affect the success of farmer cooperatives in Jalisco, the board of directors and management need to focus on these difficulties, making sure their cooperatives grow successfully.

8.3 Limitations of the study

Even though this study accomplished its aim, there are some limitations that need to be considered:

- Due to limitations of time, only three cooperatives were included in this study.
- The results are limited to the region of Los Altos, Jalisco and might not be valid to other states of Mexico.
- There is a lack of reliable literature on farmer cooperatives in Los Altos, Jalisco.

- The use of purposive and convenience sampling to select interviewees might have not represented the population as a whole, and, therefore, might be biased by volunteers, affecting the study results.
- The limited size of the sample size of the survey limited the quantitative analysis.
- Financial information was not available for the study; this may alter the analysis as financial results are an important indicator of success of cooperatives.
- The interviews were conducted in Spanish and translated to English, affecting in some cases the intended meaning.

8.4 Recommendations for further research

This study contributed by identifying factors that influence the success of famer cooperatives in Jalisco. Although, in order to obtain a better understanding of farmer cooperatives, further research is needed in the following areas:

- Identification of better approaches that the government could take to promote farmer cooperatives in the region and in the country.
- Consideration of smaller and struggling farmer cooperatives in Jalisco in order to confirm the factors identified in this study.
- Comparison of successful and unsuccessful famer cooperatives.
- Consideration of other type of cooperatives involving cropping and other industrial activities.

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Appendix

Appendix 1: Low Risk Notification

MASSEY UNIVERSITY
ALBANY

6 July 2015

Rex Paz
87 Rosalie Terrace
Kelvin Grove
Palmerston North 4414

Dear Rex

Re: Challenges of the Mexican Dairy Industry: The Collective Action

Thank you for your Low Risk Notification which was received on 26 June 2015.

Your project has been recorded on the Low Risk Database which is reported in the Annual Report of the Massey University Human Ethics Committees.

You are reminded that staff researchers and supervisors are fully responsible for ensuring that the information in the low risk notification has met the requirements and guidelines for submission of a low risk notification.

The low risk notification for this project is valid for a maximum of three years.

Please notify me if situations subsequently occur which cause you to reconsider your initial ethical analysis that it is safe to proceed without approval by one of the University's Human Ethics Committees.

Please note that travel undertaken by students must be approved by the supervisor and the relevant Pro Vice-Chancellor and be in accordance with the Policy and Procedures for Course-Related Student Travel Overseas. In addition, the supervisor must advise the University's Insurance Officer.

A reminder to include the following statement on all public documents:

> *"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research.*
>
> *If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Dr Brian Finch, Director (Research Ethics), telephone 06 356 9099, extn 86015, e-mail humanethics@massey.ac.nz".*

Please note that if a sponsoring organisation, funding authority or a journal in which you wish to publish requires evidence of committee approval (with an approval number), you will have to provide a full application to one of the University's Human Ethics Committees. You should also note that such an approval can only be provided prior to the commencement of the research.

Yours sincerely

BTFinch.

Brian T Finch (Dr)
Chair, Human Ethics Chairs' Committee and
Director (Research Ethics)

cc Prof Nicola Shadbolt, Prof Nicholas Lopez-Villalobos
Dr Elena Garnevska,

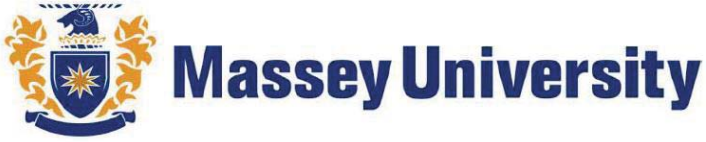
Institute of Agriculture & Environment
Palmerston North

Professor Peter Kemp
Head of Institute - Institute of Agriculture & Environment

Palmerston North

Massey University Human Ethics Committee

Appendix 2: Letter to participants



Department of Agribusiness

Institute of Agriculture & Environment

Massey University

PO Box 11 222

Palmerston North 4442

New Zealand

Farmer Cooperatives in Mexico

Case studies in Jalisco

Information sheet

Cooperativas de productores en México

Estudios de caso en Jalisco

Hoja Informativa

Dear Sir/Madam:

My name is Rex Mauricio Romero and I am doing a Masters in AgriCommerce at Massey University.

- The overall aim of this research is: To identify key factors that influence the success of farmer cooperatives in Jalisco, Mexico.

Mi nombre es Rex Mauricio Romero y me encuentro realizando una maestría en agronegocios en la Universidad de Massey.

- El objetivo principal de este estudio es: Identificar factores que influyen al éxito de cooperativas de productores en el estado de Jalisco, México.

The objectives include:

Los objetivos incluyen:

- Overview the situation of the agricultural industry in Mexico and Jalisco.
- Repasar la situación de la industria agropecuaria en México y Jalisco.

- Describe and analyse farmer cooperatives in Mexico and Jalisco.
- Describir y analizar las cooperativas de productores de México y Jalisco.

- Describe key factors of success of farmer cooperatives in Jalisco.
- Describir factores clave para el éxito de cooperativas de productores en Jalisco.

- Analyse key factors that influence the success of farmer cooperatives in Jalisco.
- Analizar factores clave que influyen al éxito de cooperativas de productores en Jalisco.

You are most welcome to participate in this study. If you decide to take part, you will be asked to sign a consent form on which you can choose to have your name and position acknowledged in this research. The interview will take about one hour. With your permission, I would like to take some notes during the interview.

Su participación en este estudio es más que bienvenida. Si decide tomar parte, se le pedirá que firme la forma de consentimiento en la cual puede elegir colocar su nombre y posición en esta investigación. La entrevista tomara alrededor de una hora. Con su permiso, tomare algunas notas durante la entrevista.

If you decide to participate, you have the right to:

Si decide participar, usted tiene lo siguientes derechos:

- Decline to answer any particular question
- Declinar en responder cualquier pregunta.

- Withdraw from the study at any time during participation
- Retirarse del estudio en cualquier momento de la participación.

- Ask any question about the study at any time during participation
- Realizar cualquier pregunta sobre el estudio y durante su participación.

- Provide information with the understanding that your name will not be used unless you give permission to the researcher
- Podrá proveer información bajo el entendido que su nombre no será utilizado a menos que se lo autorice al investigador.

- Be given access to a summary of the project findings when it is concluded.
- Tendrá acceso a un resumen sobre los resultados del proyecto ya que este concluya.

- Ask for the recorder to be turned off at any time during the interview
- Solicitar que la grabadora sea apagada en cualquier momento de la entrevista

Data Management

Data obtained will be analyzed and used for my Masters in AgriCommerce thesis and for academic publications. All data will be stored securely in a safe place. The thesis will be accessed through the Massey University library.

La información obtenida será analizada y utilizada para mi tesis en la maestría en agronegocios y para publicaciones académicas. Toda la información será almacenada en un lugar seguro. La tesis será revisada a través de la biblioteca de la Universidad de Massey.

Project Contacts

Contactos del proyecto

For your convenience, contact details of me and my supervisors have been provided below:

Para su conveniencia, a continuación se encuentra información sobre contacto de mis supervisores:

Researcher

Rex Mauricio Romero

87 Rosalie Terrace, Kelvin Grove, Palmerston North 4414, New Zealand

Tel: 027 440 88 99

Email: rm.romero.paz@gmail.com

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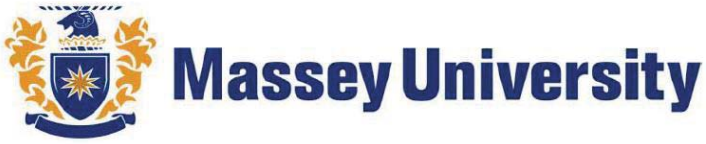
"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Professor John O'Neill, Director, Research Ethics, telephone 06 350 5249, email humanethics@massey.ac.nz".

"Este Proyecto ha sido evaluado y revisado como bajo riesgo. Por consecuencia, no ha sido revisado por el Comité de Ética de la universidad. El investigador es responsable de la conducta ética de esta investigación.

Si tiene alguna duda sobre la conducción de esta investigación en la cual desea hablar con alguien aparte del investigador, favor de contactar al Profesor John O'Neill, Director de Ética de Investigación, teléfono 06 350 52 49, email humanethics@massey.ac.nz"

Appendix 3: Consent form



Department of Agribusiness
Institute of Agriculture & Environment
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PO Box 11 222
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New Zealand

Farmer Cooperatives in Mexico

Case studies in Jalisco

PARTICIPANT CONSENT FORM – INDIVIDUAL

Cooperativas de productores en México

Estudios de caso en Jalisco

FORMA DE CONSENTIMIENTO DEL PARTICIPANTE

Dear Sir/Madam:

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

He leído la hoja informativa y me han explicado los detalles de esta investigación. Mis preguntas han sido respondidas y entiendo que puedo hacer más preguntas en cualquier momento.

I agree/do not agree to the interview being sound recorded.

Acepto / no acepto que graben la entrevista.

I wish/do not wish to have my recordings returned to me.

Solicito / no solicito que me regresen mis grabaciones.

I wish/do not wish to have data placed in an official archive.

Solicito/no solicito que coloquen mi información en un archivo oficial.

I agree to participate in this study under the conditions set out in the Information Sheet.

Acepto participar en esta investigación bajo las condiciones establecidas en la Hoja Informativa

Signature/
Firma: .....

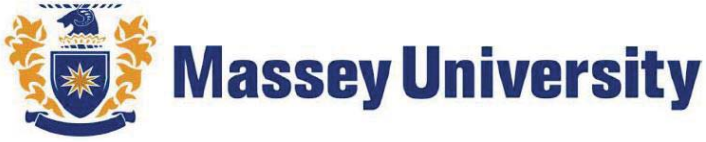
Date/
fecha: .....

Full Name – printed/
Nombre completo .....

Appendix 4: Experts and top management interviewing list

Date	Respondent	Organisation	Position
5-Aug	1	UNAM (National University of Mexico)	Researcher and consultant
11-Aug	2	CUALTOS (University of Los Altos) and UCCA	Researcher and consultant
11-Aug	3	UCCA	General Manager
18-Aug	4	Cooperative San Miguel Arcangel	President
18-Aug	5	Cooperative UPG	General Manager
19-Aug	6	Cooperative Nutrimentos	President
19-Aug	7	Cooperative CECOPAL	President
24-Aug	8	Cooperative Prolea	President
26-Aug	9	Cooperative Pedro Ezqueda	General Manager
26-Aug	10	Cooperative Pedro Ezqueda	Board Member
26-Aug	11	Nestle	Regional Supervisor
4-Sep	12	COFOCALEC	General Manager

Appendix 5: Survey



Department of Agribusiness

Institute of Agriculture & Environment

Massey University

PO Box 11 222

Palmerston North 4442

New Zealand

Dear cooperative member,

My name is Rex Mauricio Romero and I am doing a Masters in AgriCommerce at Massey University.

The overall aim of this research is:

• To identify key factors that influence the success of farmer cooperatives in Jalisco, Mexico.

I am surveying members of farmer cooperatives from Jalisco, the more responses we get, the more accurately the outcomes from this research can be extrapolated to the larger farmer cooperative population. Your response to this survey is valuable.

All your answers will remain anonymous and confidential. In addition, data will be coded and analysed so that no individual can be identified from the results of this project.

This survey is designed to take no more than 15 minutes of your time. We suggest you to fully complete the survey once you start.

For more information about the project or myself, please see the "information sheet".

Thank you very much for your time, help and contribution in this project.

Yours sincerely,

Rex Mauricio Romero

Please mark a box with a ✔indicating to what extent do you agree or disagree with the following statements:

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Leadership & management					
1. The leader/s of your cooperative have a good understanding of cooperative business	☐	☐	☐	☐	☐
2. The leader/s of your cooperative have a good understanding of the dairy industry	☐	☐	☐	☐	☐
3. The leader/s of your cooperative have a positive impact on the development of the cooperative	☐	☐	☐	☐	☐
4. You are pleased with the running of the cooperative as a business	☐	☐	☐	☐	☐
5. You are pleased on how the cooperative invests your equity capital	☐	☐	☐	☐	☐
Membership					
1. You frequently participate in the **general assembly**	☐	☐	☐	☐	☐
2. Your suggestions in the **general assembly** are taken into account	☐	☐	☐	☐	☐
3. You have a good understanding of cooperative business	☐	☐	☐	☐	☐
4. You have knowledge and skills relating to the dairy industry	☐	☐	☐	☐	☐
5. You wish to continue as a cooperative member in the next 5 years	☐	☐	☐	☐	☐

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Communication					
1. Communication among members is strong	☐	☐	☐	☐	☐
2. You are well informed about the strategies of your cooperative	☐	☐	☐	☐	☐
3. You are well informed about the results of your cooperative	☐	☐	☐	☐	☐
4. Management always explains decisions about the cooperative to members	☐	☐	☐	☐	☐
Benefits					
1. You are satisfied with the price of the concentrate of your cooperative	☐	☐	☐	☐	☐
2. The services that your cooperative provides help your business	☐	☐	☐	☐	☐
3. Your cooperative helps to improve the livelihood in the community	☐	☐	☐	☐	☐
4. Your cooperative provides training and education to the members	☐	☐	☐	☐	☐
External factors					
1. The General Law of Cooperative Societies provides a favourable legal environment for the development of your cooperative	☐	☐	☐	☐	☐
2. The government programs have been appropiate for the development of your cooperative	☐	☐	☐	☐	☐
3. Your cooperative has received support from NGOs	☐	☐	☐	☐	☐
4. The government includes the cooperative movement as part of its national development plan	☐	☐	☐	☐	☐

Characteristics about the participant

1. Gender: Male Female

2. Age_____

3. How many years have you been a cooperative member? _____

4. How many years of experience do you have in the industry?_____

5. Level of education: Elementary Secondary High School College Post grad

6. How many cows do you have?_____

7. How many hectares do you use for your dairy operation?_____

8. How many litres of milk on average do you sell per day?_____

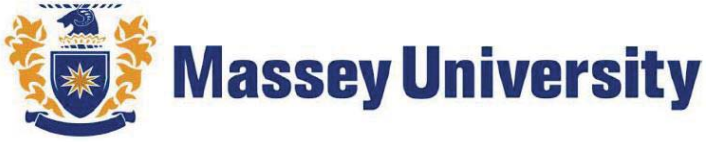
9. Please state the 3 most important factors that you consider will enable dairy cooperatives to succeed in Jalisco

1. _____

2. _____

3. _____

Appendix 6: Survey in Spanish



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New Zealand

Estimado socio de cooperativa,

Mi nombre es Rex Romero y me encuentro estudiando una Maestría en Agronegocios en la Universidad de Massey en Nueva Zelanda.

El objetivo de esta investigación es:

- Identificar factores que influyen al éxito de cooperativas de productores en el estado de Jalisco, México.

Estoy realizando una encuesta a socios de cooperativas de productores, entre más respuestas logre obtener, mejor será el resultado de esta investigación logrando extrapolarlo a la población de cooperativas de productores en todo México. Su respuesta es muy valiosa.

Todas sus respuestas serán anónimas y confidenciales, además la información será codificada y analizada de tal manera que ningún individuo será identificado para los resultados de esta investigación.

Esta encuesta está diseñada para ser respondida en máximo 15 minutos.

Para más información de mi o de esta investigación favor de ver la hoja informativa anexa.

Muchas gracias por su tiempo, ayuda y contribución a esta investigación.

Atentamente,

Rex Romero

Favor de marcar el cuadro con una ✔ indicando su nivel de acuerdo o desacuerdo con los siguientes enunciados:

	Totalmente de acuerdo	De acuerdo	Ni de acuerdo ni en desacuerdo	En desacuerdo	Totalmente en desacuerdo
Liderazgo y administración					
1. Para usted su líder tiene un buen nivel de conocimiento en cooperativas	☐	☐	☐	☐	☐
2. Para usted su líder tiene un buen nivel de conocimiento de la industria de la leche	☐	☐	☐	☐	☐
3. Para usted su líder impacta positivamente en el desarrollo de su cooperativa	☐	☐	☐	☐	☐
4. Usted se encuentra satisfecho con la administración actual de la cooperativa	☐	☐	☐	☐	☐
5. Usted esta satisfecho en como se ha invertido su capital social	☐	☐	☐	☐	☐
Membresía					
1. Asiste siempre a la asamblea general de su cooperativa	☐	☐	☐	☐	☐
2. Sus sugerencias en la asamblea son tomadas en cuenta	☐	☐	☐	☐	☐
3. Usted tiene buen nivel de conocimiento en cooperativas	☐	☐	☐	☐	☐
4. Usted tiene buen nivel de conocimientos y habilidades para la producción de leche	☐	☐	☐	☐	☐
5. Desea usted continuar como socio de su cooperativa por lo menos 5 años mas	☐	☐	☐	☐	☐

	Totalmente de acuerdo	De acuerdo	Ni de acuerdo ni en desacuerdo	En desacuerdo	Totalmente en desacuerdo
Comunicación					
1. La comunicación entre socios es buena	☐	☐	☐	☐	☐
2. Esta bien informado sobre las estrategias y actividades de su cooperativa	☐	☐	☐	☐	☐
3. Esta bien informado sobre los resultados de su cooperativa	☐	☐	☐	☐	☐
4. La administración siempre explica a los socios las decisiones tomadas sobre la cooperativa	☐	☐	☐	☐	☐
Beneficios					
1. Se encuentra satisfecho con el precio que paga por el concentrado	☐	☐	☐	☐	☐
2. Los servicios que la cooperativa proporciona le han ayudado en su negocio	☐	☐	☐	☐	☐
3. Su cooperativa ayuda a mejorar el nivel de vida en la comunidad	☐	☐	☐	☐	☐
4. Su cooperativa provee entrenamiento y capacitacion a sus socios	☐	☐	☐	☐	☐
Factores externos					
1. El mercado actual de la leche ayuda al desarrollo de su negocio	☐	☐	☐	☐	☐
2. Los programas gubernamentales han favorecido el desarrollo de su cooperativa	☐	☐	☐	☐	☐
3. Su cooperativa ha recibido apoyo de organizaciones no gubernamentales (universidades u otro tipo de organizaciones)	☐	☐	☐	☐	☐
4. El gobierno ha apoyado a las cooperativas como parte del desarrollo de Mexico	☐	☐	☐	☐	☐

Características del participante

1. Genero: Masculino Femenino

2. Edad_____

3. ¿Cuántos años lleva participando en su cooperativa?_____

4. ¿Cuántos años tiene de experiencia en el negocio?_____

5. Nivel de estudios: Primaria Secundaria Preparatoria Universidad Posgrado

6. ¿Cuántas vacas tiene en ordeña?_____

7. ¿Cuántas hectáreas de agostadero y cultivo tiene su rancho?_____

8. ¿Cuántos litros de leche vendió ayer?_____

9. ¿Para usted cuáles son las 3 cosas que ayudarían al éxito de las cooperativas productoras de leche en Jalisco?

1._____

2. _____

3. _____

Appendix 7: Questionnaire to experts and top management of farmer cooperatives in Jalisco

General information about the interviewee

1. Background: Gender, level of studies, age, position in the cooperative and name of cooperative.
2. Tell us about yourself, how did you end up on the management/involved with the cooperative?
3. Are you one of the founders of the cooperative?
   Yes, why did you establish this cooperative?
   No, why did you join the cooperative?

General information about the cooperative

4. What is the history and evolution of the cooperative?
5. What is the structure of the cooperative?
6. What is the vision/aim, strategy and objectives of the cooperative? Any changes over the years?
7. How many people are on the board?
8. What is the role of the board, steering committee and management?
9. How do members participate? (voting)
10. How is capital/funding obtained? (shares, fees etc)
11. How is the capital invested?
12. How does the cooperative collect the members' products?
13. Does the cooperative make any processing?
14. How does the cooperative sell its products? What are they?
15. What is your main market?
16. What advantages do you see in working with traditional farmers?
17. Who has the biggest influence on the decisions of the cooperative? Is there any strong leader?
18. How are you taking decisions in your cooperative?
19. Do you have any constitution or written document?
20. How is the performance of management assessed?
21. How do you see the current performance of your cooperative?

22. Since the establishment, has the cooperative achieved its targeted objectives? How?
23. How has the cooperative been able to grow?
24. How does it retain money for growth?
25. Has there been any financial difficulty and how was it overcome?
26. Can anyone join the cooperative?
27. Was there any promotion to attract members for the cooperative and what kind?
28. What is the process for a farmer to become a cooperative member?
29. How can members exit the cooperative and what are the implications?
30. Do members have good knowledge of cooperatives?
31. How many members are in the cooperative now and how many were when it was established?
32. Would you like to have more members in the cooperative?
33. Does the cooperative pay the same price to all members?
34. Do members have similar economic potential? (Homogeneity) Do you consider this an important factor?
35. Do members wish to continue as cooperative members in the long term (more than 5 years)?
36. What is a signal that people trust each other and the cooperative?
37. Why do you think some farmers have left their cooperatives?
38. How would you asses the control of members?
39. How are you communicated with the members? How? How often?
40. Do members frequently participate in the general assembly?
41. Are members well informed about the plans, strategies and results of their cooperative?
42. What are the benefits of being a member? (Transportation costs?)
43. How do the services that the cooperative provides help achieve the members' business goals?
44. Does the cooperative provide any training or education to members?
45. Are you in contact with any government organisation?
46. What kind of support has the cooperative got from the government and/or NGO since it established?

47. Do you think the General Law of Cooperative Societies provides a favourable legal environment for the development of your cooperative?
48. Do you think that the actual Mexican government includes the cooperative movement or considers it as part of the national development plan?
49. How do you think farmer cooperatives have been successful against the economic politics that Mexico is facing?
50. What are the biggest challenges in the dairy business environment in Mexico for farmer cooperatives in Jalisco?
51. Do you think cooperatives are capable of generating the volume and quality that big players (Nestle, Sello Rojo, etc) need?
52. Do you think Mexican milk processors have the infrastructure for manufacturing the dairy ingredients that are in high demand in the country?
53. Do you think Liconsa and other companies will keep increasing the imports of dairy products?
54. Do you think small milk producers in Jalisco and the Mexican tropics will decrease or increase in the milk business?
55. It could be argued that dairy production in Jalisco should simply die out because it is no longer profitable, even if the farms are not the most efficient or productive by neoliberal standards, do you think supporting them can improve the lives of rural populations?
56. Cooperatives have long term goals with a purpose of environmental responsibility, sustainable economic growth and social development. Are these goals promoted by the cooperative?
57. How do you see your cooperative in 5 and 10 years?
58. What are the key factors that will enable farmer cooperatives succeed in Jalisco?

Appendix 8: Questionnaire to experts and top management of farmer cooperatives in Jalisco in Spanish

Información general del entrevistado

1. Antecedentes: Genero, nivel de estudios, edad, posición en la cooperativa y nombre de la cooperativa.
2. Platíqueme un poco de usted, como es que termino dirigiendo/ involucrado/manejando/ administrando una cooperativa?
3. ¿Es usted fundador de la cooperativa?
   Si, ¿Por qué motivos inicio la cooperativa?
   No, ¿Por qué motivos se integró a la cooperativa?

Información general de la cooperativa

4. ¿Cuál es la historia y evolución de la cooperativa?
5. ¿Cuál es la estructura de la cooperativa?
6. ¿Cuál es la visión, estrategia y objetivos de la cooperativa? Ha habido cambios durante los años?
7. ¿Cuánta gente integra la junta directiva?
8. ¿Cuál es el rol de la junta directiva, comité de dirección y administración?
9. ¿Cómo participan los socios? (sistema de votación)
10. ¿Cómo obtiene su capital y fondos? (acciones, cuotas)
11. ¿Cómo y en que se invierte el capital social?
12. ¿Cómo es que la cooperativa recoge el producto de sus socios?
13. ¿La cooperativa procesa la leche? Que productos?
14. ¿Cómo es que se vende el producto?
15. ¿Cuál es su principal mercado?
16. ¿Quién considera que tiene la mayor influencia en la toma de decisiones en la cooperativa? ¿Qué tan fuerte considera la influencia del líder?
17. ¿Cómo se toman las decisiones en su cooperativa?
18. ¿Cuentan con algún reglamento o documento escrito?
19. ¿Cómo miden el desempeño administrativo?
20. ¿Cómo ve el desempeño actual de su cooperativa?
21. ¿La cooperativa ha alcanzado sus objetivos trazados desde su establecimiento? Cómo?
22. ¿Cómo ha logrado la cooperativa crecer?

23. ¿Cómo es que retiene capital para crecer?
24. ¿Ha tenido alguna dificultad financiara? como logro superarla?
25. ¿Cualquiera puede integrarse a la cooperativa?
26. Hubo alguna promoción para atraer socios? De qué tipo?
27. ¿Cuál es el proceso para que un productor pueda ser socio de la cooperativa?
28. ¿Cómo pueden los miembros salir de la cooperativa y cuáles son sus implicaciones?
29. ¿Los socios tienen buen conocimiento e entendimiento sobre cooperativas?
30. ¿Cuántos socios pertenecen a la cooperativa y cuantos la iniciaron?
31. ¿Desearía contar con más socios?
32. ¿La cooperativa paga el mismo precio a sus socios?
33. ¿Los socios cuentan con un potencial económico similar/homogéneo?
34. ¿Cuál considera una señal de que los socios confían en uno al otro y la cooperativa?
35. ¿Por qué considera que socios han dejado la cooperativa?
36. ¿Cómo mide el control de los socios? Participación?
37. ¿Cómo se comunica con los socios? Que tan seguido? (asambleas?)
38. ¿Los socios participan frecuentemente en las asambleas?
39. ¿Los socios están bien informados sobre las estrategias, planes y resultados de la cooperativa?
40. ¿Cuáles son los beneficios de ser socios de la cooperativa? (costo del transporte?)
41. ¿Qué tanto los servicios que la cooperativa provee ayudan a los socios en su negocio?
42. ¿La cooperativa provee entrenamiento y educación de algún tipo?
43. ¿Está en contacto con alguna entidad gubernamental?
44. ¿Qué organizaciones proveen servicios a cooperativas?
45. ¿Qué tipo de apoyo ha tenido la cooperativa del gobierno u ONG desde sus inicios?
46. ¿Considera que La Ley General de Sociedades Cooperativas provee un ambiente legal favorable para el desarrollo de su cooperativa?
47. ¿Cómo considera que las cooperativas de productores han logrado sobrevivir antes las políticas económicas que México enfrenta?
48. ¿Cuáles considera como los grandes retos que enfrentan las cooperativas de productores en el ámbito de la industria lechera?

49. ¿Cree que las cooperativas sean capaces de generar suficiente volumen y calidad para abastecer las necesidades de los procesadores como lo son Nestle o Sello Rojo?
50. ¿Cree que los procesadores en México tienen la infraestructura para procesar los ingredientes lácteos que el país demanda?
51. ¿Cree que Liconsa y otras compañías continúe importando leche del exterior?
52. ¿Cree que los productores de leche en Jalisco y de los trópicos incrementen o se reduzcan en el negocio de la leche?
53. Se ha debatido que la producción de leche en Jalisco llegue a desaparecer por su baja rentabilidad. Aunque los productores no sean los más eficientes o productivos en cuanto a los estándares neoliberales, ¿Considera que apoyando estos productores mejore la vida en las poblaciones rurales?
54. Las cooperativas tienen metas a largo plazo con una responsabilidad ambiental, crecimiento económico sustentable y desarrollo social. ¿Considera que su cooperativa promueve este tipo de principios?
55. ¿Considera que las cooperativas de productores ayudan a incrementar la producción de leche, crear empleos, mejorar la vida en zonas rurales e incrementar la seguridad alimentaria en México?
56. ¿Cómo es que su cooperativa ha logrado ser exitosa por tanto tiempo?
57. ¿Cómo ve a su cooperativa en 5 y 10 años?
58. ¿Cuáles considera que son los factores clave que permitan a las cooperativas de productores de Jalisco ser exitosas?