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FACTORS OF SUCCESS AND CHALLENGES IN AGRICULTURAL COOPERATIVES:

A Case Study of Two Bolivian Cooperatives

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Abstract

Agricultural cooperatives in Bolivia have played a significant role in reducing the negative effects of subsistence farming among small-scale farmers. However, despite this effect, little has been written about the factors that drive their success and the challenges they face under the changing environment that the country has been facing over the last decade. This study aims to analyse the factors of success and challenges for agricultural cooperatives in the country. For this purpose, two of the most representative agricultural cooperatives in Bolivia were studied and the results were compared and discussed with the existing literature on cooperative success.

Seven factors for success were identified as the most relevant for the two cooperatives studied. These factors are training and leadership development, economic incentives for members, strategic management, member services, member control, a strong sense of ownership by members, and a common cultural background. Despite both cooperatives having different approaches to the implementation of these factors of success, common characteristics can also be observed among them. A strong member control structure paired with leadership development initiatives and a strategic ethos help to minimise the agency costs in the cooperatives and increase the efficiency of the management process. However, a bottom-up approach to the implementation of the cooperative structure generated by a common cultural background and a strong sense of ownership considerably increases the willingness of members to cooperate. The adaptation of ethnic-based dynamics across the cooperatives increases the alignment of the members' and the cooperative's objectives and drives the efficacy of policies.

The main challenges that the two cooperatives face relate to internal and external factors. The possibility of free-rider problems generated by the lack of market mechanisms for membership share prices can affect the implementation of expansion projects in the cooperatives. Additionally, increasing complexities generated by the growth of the cooperatives create the need for better prepared management staff. The external challenges created by the changes in legislation, political instability, and a lack of support from institutions also affect the development of cooperatives in the country.

The analysis of these factors and challenges will provide useful insights into the drivers for agricultural cooperatives in Bolivia.

Acknowledgements

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"Godwin and Shepard (1979) pointed out a decade ago that policy scientists were doing the equivalent of "Forcing Squares, Triangles and Ellipses into a Circular Paradigm" by using the commons-dilemma model without serious attention to whether or not the variables in the empirical world conformed to the theoretical model."

Ostrom (1990, p. 24)

Table of Contents

List of Figures

List of Tables

Appendices

List of Abbreviations

AFCOOP	Cooperative Audit and Control Authority
AFID	Financial Alternative for Development
CAICO	Integral Agricultural Cooperative of the Okinawa Colonies
CETABOL	Bolivian Agricultural Technological Centre
CONALCO	National Cooperative Council
CONCOBOL	National Confederation of Bolivian Cooperatives
DGC	General Directorate of Cooperatives
DGPPFPPC	General Directorate of Public Policy, Development, Protection, and Promotion of Cooperatives
DNC	National Directorate of Cooperatives
EL CEIBO	Cooperative Central “El Ceibo”
FENACRE	National Federation of Credit and Savings Cooperatives
FENCOA	National Federation of Agricultural Cooperatives
FENCOMIN	National federation of Mining Cooperatives
ICA	International Cooperative Alliance
INALCO	National Institute for Cooperatives
INE	National Institute of Statistics
IOF	Investor Oriented Firm
PIAF	Agro-Ecological Forestry Implementation Programme

CHAPTER 1. Introduction

1.1. Background for the Research

Agriculture in Bolivia faces a series of challenges regarding the structure, development, and size of farms across the country (Barrientos-Fuentes & Torrico-Albino, 2014). Agricultural production levels in the country are very low compared to the other countries of the region, despite the fact that agriculture accounts for 14% of the country's GDP (Murguia, Hossiso, & Lence, 2018). This is mostly due to the major differences in climatic and land conditions between the highlands and the lowlands (Redo, Aide, & Clark, 2012). The highlands present an average elevation of 4000 meters above sea level with low average temperature, limiting agricultural production to the valleys that exist in the area (Redo et al., 2012). Whereas the lowlands present large extensions of land with tropical climate, heavy rainfalls and extensive vegetation (Redo et al., 2012). These factors make the lowlands more apt for large scale mechanized production of oilseed and cattle (Redo et al., 2012). Additionally, with the exception of Santa Cruz city, these areas are less densely populated, which makes the average land tenancy of farmers bigger than that of the rest of the nation (Barrientos-Fuentes & Torrico-Albino, 2014). Conversely, the highlands present a poorer and smaller agricultural structure (Barrientos-Fuentes & Torrico-Albino, 2014). The Andean part of the country presents the highest concentration of small family farms, even though they are prevalent in all the regions (Barrientos-Fuentes & Torrico-Albino, 2014). These small farms are mostly subsistence-based and have low access to mechanization (Barrientos-Fuentes & Torrico-Albino, 2014). For this reason, farmers in this area of the country are heavily dependent on cooperation schemes within the community to overcome challenges in labour and capital for production (Barrientos-Fuentes & Torrico-Albino, 2014).

One of the main solutions to overcome the challenges that subsistence farming presents for farmers is the creation of agricultural cooperatives. These cooperatives provide small-scale farmers in the country with the ability of generating access to value-addition initiatives and increase their bargaining power within their industries (Ofstehage, 2012; Villaroel, 2014) Cooperatives have a long history in the country where the first cooperatives were created in the decade of the 1930s after the Chaco War with Paraguay (Villaroel, 2014). However, the development of these cooperatives and the institutions overseeing the cooperative movement has followed a very unstable path (Mogrovejo & Vanhuynegem, 2012). Cases of lack of transparency and mismanagement have undermined the image of the sector in the country. Nevertheless, successful cooperatives have managed to grow despite changing conditions in the sector (Villaroel, 2014).

Over the last couple of decades, the cooperative sector in Bolivia has experienced a resurgence. This revitalisation process of the cooperative sector in the country led to reform in the legislation governing

cooperatives in 2013. This new legislation aimed to modernise the structure of the sector and had the participation of several representatives of cooperatives in different industries. This process helped to generate an update of the data on the cooperatives and purge inactive cooperatives that remained on the system (Villaroel, 2014) However, the implementation of the new legislation generated a considerable increase in the bureaucracy for the adapting process (Arrazola, 2019).

1.2. Definition of the Problem

Agricultural cooperatives represent an interesting alternative for small-scale farmers to access services that otherwise would be unattainable to them (Villaroel, 2014). Despite the constant changes to the institutions around the cooperative sector, several successful cooperatives have developed across the country (Mogrovejo & Vanhuynegem, 2012). These cooperatives work in different industries and under the different conditions that each region of the country presents. However, the cooperatives share several common traits between them. The structure of the member base, mostly small farmers with a similar background, and the common legislative environment generate common factors to their success (Mogrovejo & Vanhuynegem, 2012).

Previous studies have analysed these two notable cooperatives in the country from different perspectives. These studies are based on a historical perspective (Mogrovejo & Vanhuynegem, 2012; Ocampo, 1987), the social and cultural factors that determine their inner dynamics (Ofstehage, 2012; Walsh-Dilley, 2017) and the effect of the aggregation in the development of better market conditions (Estevez, Bhat, & Bray, 2018; Villaroel, 2014; Walsh-Dilley, 2013). However, there is a gap in the literature regarding the analysis of the factors of success and challenges that agricultural cooperatives in Bolivia face.

1.3. Research Aim and Objectives

The aim of this research is to compare and contrast the factors of success and challenges of agricultural cooperatives in Bolivia.

To achieve this aim, the following objectives have been established:

- To develop a theoretical framework on factors contributing to the success of cooperatives.
- Compare and discuss the common factors of success in agricultural cooperatives in Bolivia.
- Compare and discuss the common challenges of agricultural cooperatives in Bolivia.

CHAPTER 2. Country Context

This chapter provides general information about Bolivia and the country's geographical, social and economic context, as well as understanding its history and how it has shaped the country's current situation. The first part of the chapter will provide general information and indicators about the country. The second part will focus on the agriculture sector of the country and the different characteristics of its regions. Then, a summary of the history of cooperatives in the country will be provided. Finally, the main elements of the legislation governing cooperatives in Bolivia will be presented.

2.1. Country description

Bolivia is a landlocked country situated in the centre of South America. Its official name is the Plurinational State of Bolivia and it spans from the Andes mountain range to the lowlands of the Amazon. Despite originally having access to the Pacific Ocean upon its independence in 1825, it ended up landlocked after a war with Chile in 1904. It shares borders to the north and east with Brazil, to the south east with Paraguay, to the south with Argentina and to the west with Chile and Peru. Figure 1 shows the geographic map of the country.

Figure 1 Geographic Map of Bolivia Adapted from Sevilla Callejo (2009), Creative Commons Licence (2009)

Bolivia has a population of approximately 11.4 million people (IMF, 2018) divided among its nine departments. Its three largest cities are Santa Cruz (1,454,539 Habitants), El Alto (842,378 Habitants) and La Paz (757,184 Habitants) (INE, 2012). Santa Cruz is located in the Amazonic lowlands whereas La Paz and El Alto are neighbouring cities in the Andean highlands. Even though the country's capital is Sucre, the seat of power with the central government is located in La Paz. The country's political constitution recognizes 36 indigenous nations among its population, with two of them being majoritarian population groups: Quechua and Aymara. Additionally, each of these Indigenous groups has their own language, but, Spanish remains the main spoken language in the country (INE, 2012). This shows the level of diversity in terms of social and geographical factors that this country has.

2.1.1. Macroeconomic Indicators

Over the last decade, Bolivia has experienced a considerable economic growth due to the increase in governmental expenditure of the current administration (COFACE, 2019). Despite this growth trend, it retains the second lowest GDP per capita among countries in South America (IMF, 2018). Table 1 shows a compilation of the most important macroeconomic indicators for the country. These numbers show relative stability in terms of inflation and exchange rates and considerable growth in terms of GDP, the latter generated by a constant increase in government debt. Even though government expenditure, as a percentage of GDP, has not grown significantly, the growth of the nominal GDP has been more than 10%. This is also demonstrated by the fact that since 2005, external debt has quadrupled (Ministerio de Economia y Finanzas Publicas, 2019). Also, it is worth noting that there is a constant presence of policy action to make the exchange rate and inflation behave the way they do. An example of this is the change of the calculation base for the consumer's price index, one in 2007 and another one in 2017 (INE, 2018). These changes have created scepticism from economic analysts because of the lack of transparency in communicating the changes in methods of measurement (Los Tiempos, 2018). Additionally, the exchange rate relating to the US dollar, Bolivia's main trading currency, has been maintained at the same level since 2009 (World Bank, 2019a) generating an artificial price that does not reflect the changing nature of this currency (Hannover, 2018). The effect these policies have on the behaviour of macroeconomic indicators in Bolivia indicate that the official information may not accurately portray the actual situation of the country.

Table 1. Macroeconomic Indicators of Bolivia

Indicator	2017	2018	Annual Variation	Source
GDP (Current Prices in Billions of $us)	37.782	41.833	10.72%	IMF
GDP (Constant Prices in Billions of BOB)	46.236	48.224	4.30%	IMF
GDP per capita (Current Values in $us)	3,412.81	3,719.25	8.98%	IMF
GDP per capita (PPP 2011 International Dollar)	6,873.99	7,056.66	2.66%	IMF
Inflation Rate (Consumer's Price Index)	99.323	102.468	3.17%	IMF
Human Development Index	0.693	0.703	1.4%	UNDP
Human Development Index Rank	118	114	+4	UNDP
Exchange Rate BOB per USD	6.91	6.91	0.00%	World Bank
Unemployment rate (% of total labour force)	4%	4%	0.00%	IMF
General Government Revenue (% of GDP)	30.823	31.405	1.89%	IMF
General Government Total Expenditure (% of GDP)	38.638	38.877	0.62%	IMF
General Government Net Debt (% of GDP)	33.922	38.109	12.34%	IMF
Current Account Balance (% of GDP)	-6.285	-5.25	-16.47%	IMF

Note. Data from IMF (2018); UNDP (2018); World Bank (2019b)

2.1.2. Politic Instability

Bolivia's politic situation has been very unstable since the general elections of 2019. The elections took place under a tense political atmosphere and a marked division created between the supporters of the current administration and its opposition. However, strong indications of fraud by the party in government during the counting of the votes culminated in social protest, the annulment of the results of the election, and the resignation of President Evo Morales (Watson, 2019). As a consequence of the power vacuum created, the president of the senate, Jeanine Añez, assumed power as an interim president with the task of organising new elections. However, due to the lockdown and challenges presented by the COVID 19 pandemics, the date of the new election was pushed until October 2020 (Krygier, 2020). Luis Arce, from Morales' party, was elected President amidst a growing crisis created by the COVID 19 pandemic, however with a more stable political coalition.

2.1.3. Climate

Bolivia has a wide diversity of micro-climates due to the different altitudes of its different regions. Its territory can be divided into three main geographic regions: the Andean region, Sub-Andean region, and the Tropical Plains region (INE, 2016). Each of these regions has a different average altitude and different climatic conditions that make them suitable for different kinds of agricultural production.

The region most associated with Bolivia is the Andean region. This region gets its name because it is located between the two highest sections of the Andes mountain range, the occidental and oriental *cordilleras*. This region has an average altitude of more than 3000 meters above sea level with some of the tallest peaks in South America, and represents 28% of the national territory (INE, 2016). Because of this, the region has a low average temperature and is more prone to suffer the effects of frost and hail on its agricultural production (FAO, 2017). The three departments included in this region are La Paz, Oruro, and Potosi.

The Sub-Andean region has a warmer climate with less average elevation. This region comprises of the valleys situated between the Andean Mountain Range and the Tropical Plains. It presents an average elevation of 2500 meters above sea level representing close to 13% of the country (INE, 2016). Having milder average temperatures, between 15 to 25º C, makes it more suitable for agricultural production. The three main departments included in this region are Cochabamba, Tarija, and Chuquisaca.

Finally, the Tropical Plains represent the biggest portion of Bolivian territory. This region is located by the basin of the Amazon and is characterized by a tropical climate. The average elevation of this region ranges between 200 to 500 metres above sea level and represents close to 59% of the total landmass of Bolivia (INE, 2016). Its hotter average temperature, above 25º C, and high levels of humidity characteristic of the amazon rainforest make this region suitable for agricultural production. Additionally, the flatness of the region has helped in the development of more intensive and mechanised agricultural production methods (Redo et al., 2012). The three departments that are a part of this region are Santa Cruz, Beni, and Pando.

2.2. Agriculture Sector

Agriculture represents a considerable portion of the Bolivian economy, but, with certain exceptions, it has not been developed to the same extent as other countries in the region (Murguia et al., 2018). As of 2018, Agriculture represented 11.5% of Bolivia's GDP, larger than mining, manufacturing, or financial sectors in the country (INE, 2019). Figure 2 shows the distribution of the cultivable land according to the main groups of crops grown in the country (INE, 2017). From this graphic we can

observe that the two main groups of crops in terms of cultivated land are Oilseeds and Industrial Crops, and Cereals. These two groups account for close to 80% of the total land. In terms of Oilseeds and Industrial Crops, most of the cultivated land in this category is assigned to the production of Soya and Sugarcane. Likewise, in terms of cereal production, the major crops cultivated in the country are Maize, Rice and Quinoa.

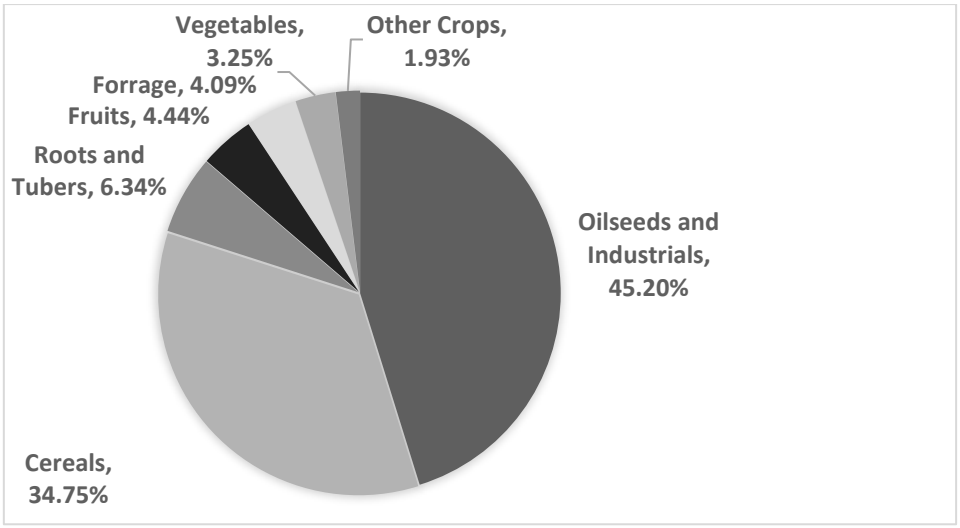


Figure 2 Distribution of Cultivated Area in Bolivia. Data from (INE, 2017)

However, the distribution of cultivated land is not uniform across the country. As Figure 3 shows, close to 69% of all cultivated land in the country is located in Santa Cruz, the largest and fastest growing in terms of economic development. The next region is La Paz, with close to 8% of cultivated land. This factor, summed to the land distribution problems that will be explained in Appendix 1, help to understand the major differences in terms of development of agricultural production in the highlands when compared to the low lands (McKay, 2018).

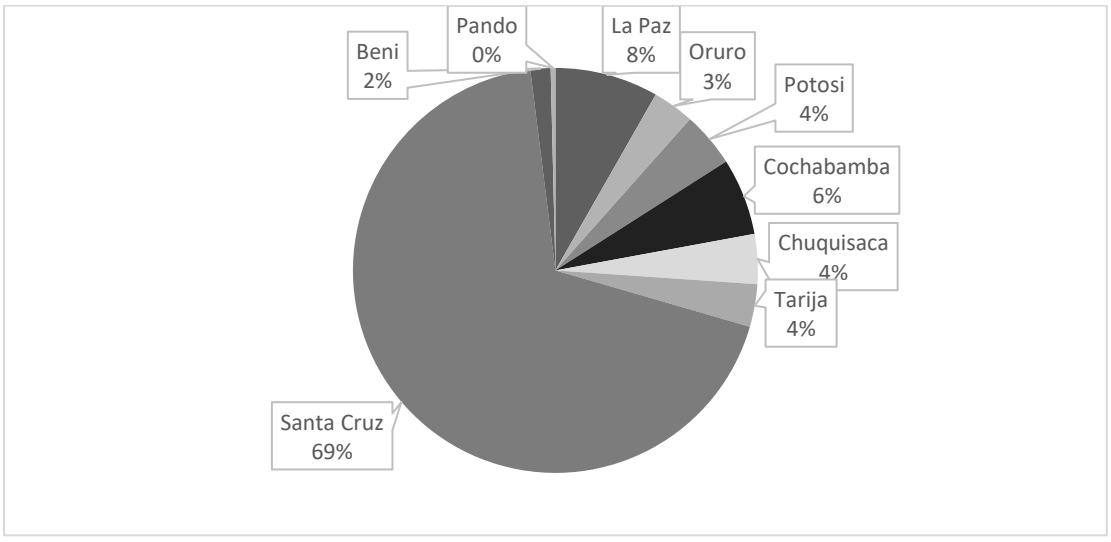
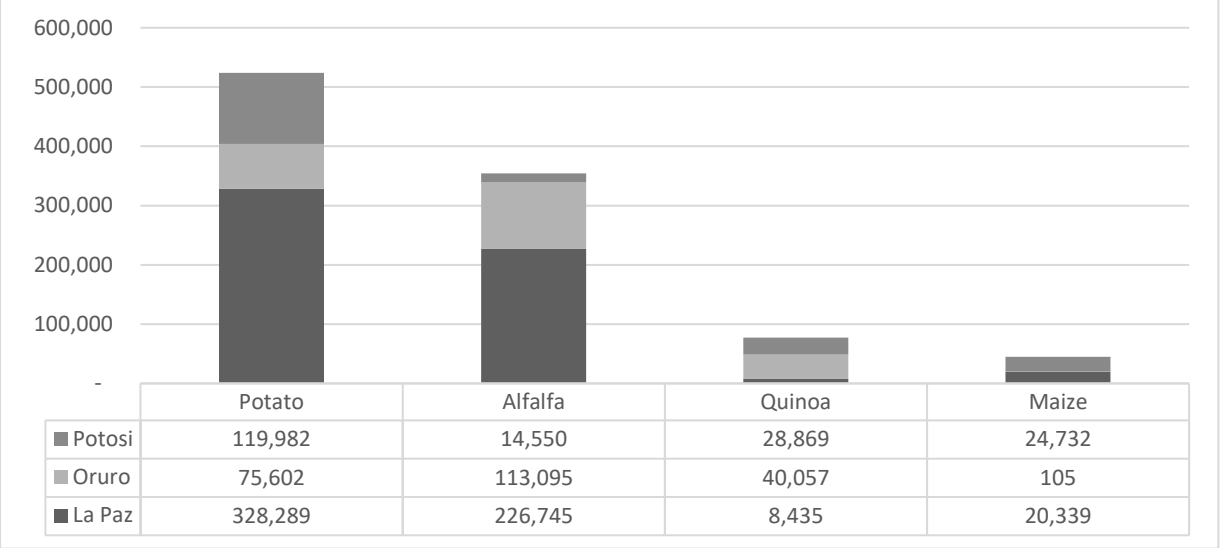


Figure 3 Cultivated Land by Departments. Data from (INE, 2017)

It is important to note the differences in the crops cultivated in each of the different climatic zones of the country. Because of these differences in elevation and weather conditions every region has a different variety of crops that are better suited for production. Figures 4, 5, and 6 show the four biggest crops cultivated in each region by the amount of tonnes produced in 2015 (INE, 2017).

2.2.1. Agricultural Production

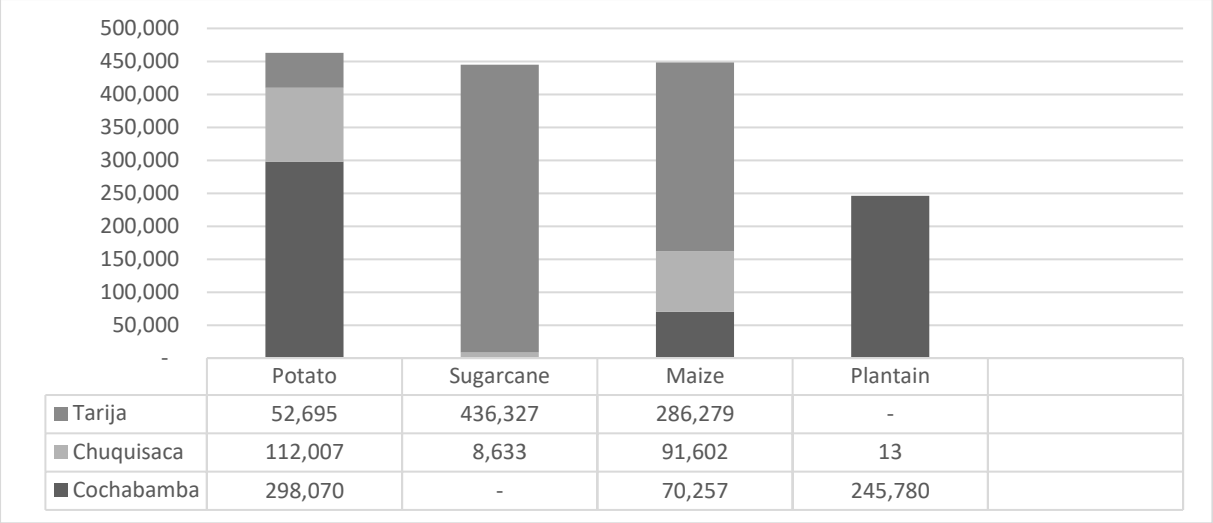
In the Andean region, as Figure 4 shows, the largest production is concentrated in cereals and tubers. The largest crop grown in that area is potato, followed by alfalfa, mostly used for camelid forage, quinoa, and maize. All of these crops are staple products for the diet of the people in this region of the country. This information shows the importance of local consumption of the crops and the presence of subsistence farming (Barrientos-Fuentes & Torrico-Albino, 2014; Ofstehage, 2012).



	Potato	Alfalfa	Quinoa	Maize
Potosi	119,982	14,550	28,869	24,732
Oruro	75,602	113,095	40,057	105
La Paz	328,289	226,745	8,435	20,339

Figure 4 Largest Crops in Andean Departments in 2017 (Expressed in Tonnes). Data from INE (2017)

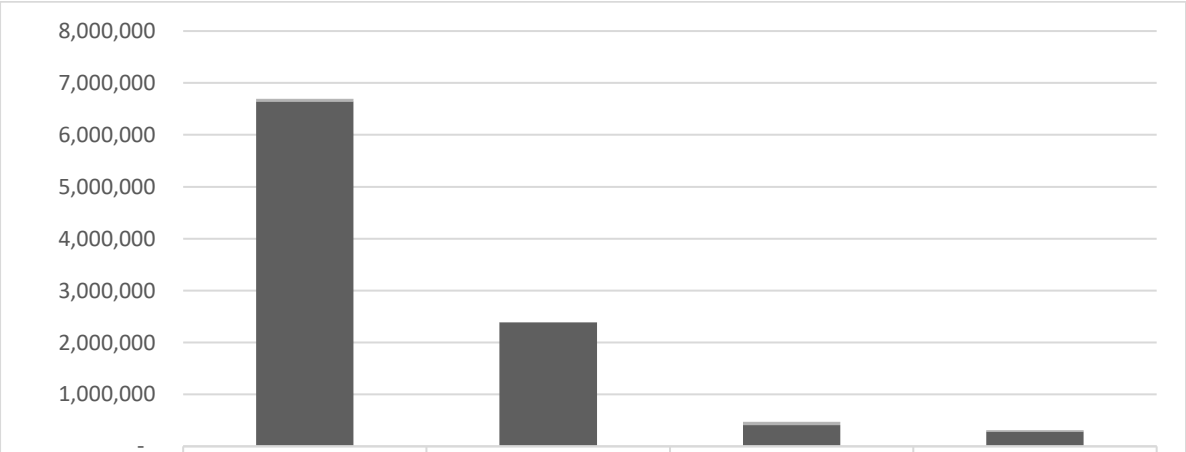
The Sub-Andean region shows some similarities to its Andean counterpart. As Figure 5 Shows, potatoes are also a major part of the agricultural production. However, the presence of sugarcane production, mostly in the southern department of Tarija, and maize shows the importance of the warmer valleys, characteristic of this region. Also, it is worth noting that production of Coca leaf, widely produced in the tropical part of Cochabamba, is not present in the official statistics of agricultural production (Rostan, 2020).



	Potato	Sugarcane	Maize	Plantain	
Tarija	52,695	436,327	286,279	-	
Chuquisaca	112,007	8,633	91,602	13	
Cochabamba	298,070	-	70,257	245,780	

Figure 5 Largest Crops in Sub-Andean Departments in 2017 (Expressed in Tonnes). Data from INE (2017)

Conversely, agricultural production in the eastern lowlands of the tropical region shows the distinct influence of Santa Cruz in production levels. In terms of output in metric tonnes, the scale of production in Santa Cruz is considerably higher than the rest of the country, as shown in Figure 6. The two main crops produced in this region, sugarcane, and soya, are mostly destined for external markets. Additionally, the current government policies focused on the development of the agricultural sector are focused on expanding the production of this zone (McKay, 2018). Furthermore, the authorisation for increasing the number of "controlled burnings" of forested areas in the country have recently generated resistance among the population, especially after the alarming fire crisis in the Bolivian amazon (BBC, 2019).

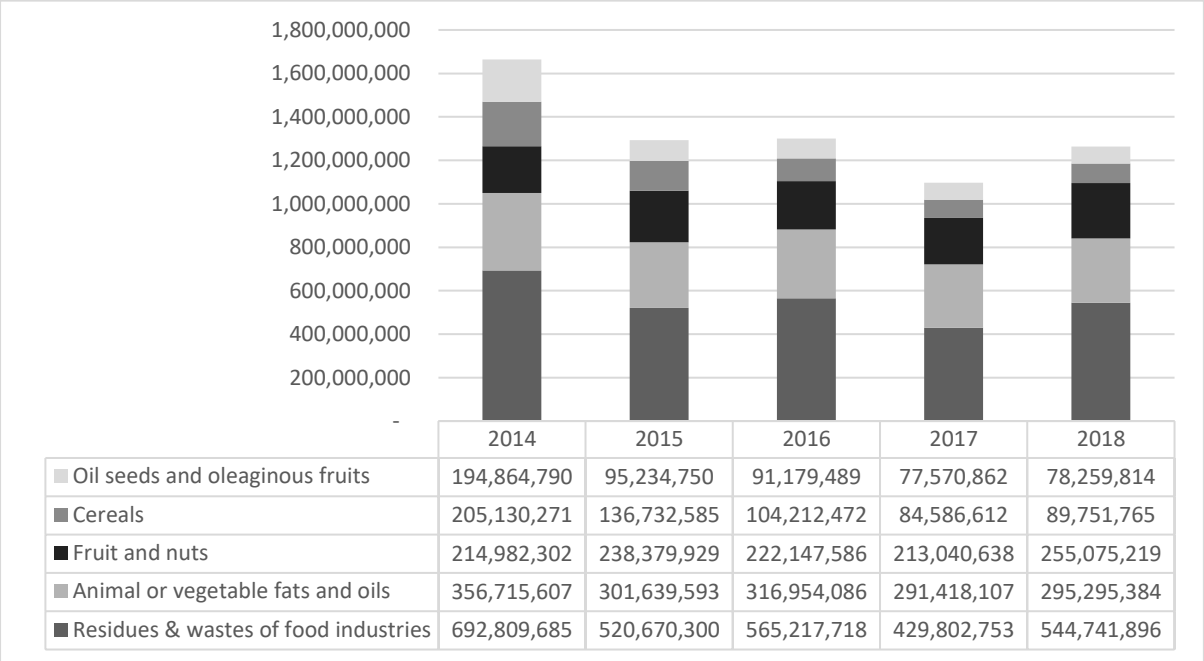


	Sugarcane	Soya	Rice	Maize
Pando	133	-	3,381	5,391
Beni	41,586	5,852	56,013	16,275
Santa Cruz	6,646,286	2,387,779	411,928	286,279

Figure 6 Largest Crops in Tropical Departments in 2017 (Expressed in Tonnes). Data from INE (2017)

2.2.2. Trade

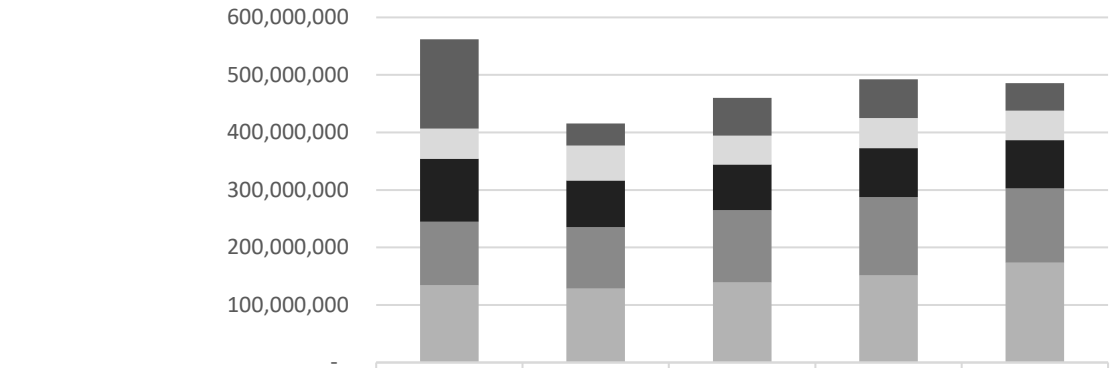
Figure 7 shows the behaviour of the major agriproducts exported from Bolivia. This data shows us that, in terms of value, the most important categories for export are processed products of the crops produced in the country. The category for residues and wastes of food industries refers to all the by-products of the processing of grains and oilseeds, like soya, that are used as fodder or for further processing. Likewise, the animal and vegetable oils category encompass the products of soy and sunflower production of the Bolivian lowlands. Cereals and fruits are also an important part of Bolivian exports, however in less quantity.



	2014	2015	2016	2017	2018
Oil seeds and oleaginous fruits	194,864,790	95,234,750	91,179,489	77,570,862	78,259,814
Cereals	205,130,271	136,732,585	104,212,472	84,586,612	89,751,765
Fruit and nuts	214,982,302	238,379,929	222,147,586	213,040,638	255,075,219
Animal or vegetable fats and oils	356,715,607	301,639,593	316,954,086	291,418,107	295,295,384
Residues & wastes of food industries	692,809,685	520,670,300	565,217,718	429,802,753	544,741,896

Figure 7 Five Largest Agriproducts Exported (Expressed in USD). Data from COMTRADE (2019)

Conversely, Bolivia's largest imports, as Figure 7 shows, are concentrated in Cereals and its by products, beverages, and other edible products for the food industry. This shows that the country is highly dependent on processed flours, cereals, and other inputs for its food industry. However, the trend also shows a diminution in the level of cereals imported since 2015 which indicates that local production was sufficient to cope with domestic demand.



	2014	2015	2016	2017	2018
Cereals	155,064,935	38,416,906	65,207,031	67,361,775	47,841,051
Beverages, spirits and vinegar	52,526,762	60,385,206	50,242,313	52,352,943	51,412,222
Preparations of cereals	109,384,348	81,448,069	79,446,267	85,136,891	84,184,927
Products of the milling industry	110,910,419	107,112,592	125,977,558	136,418,916	129,075,148
Miscellaneous edible preparations	133,828,554	128,199,655	138,981,226	151,283,999	173,402,601

Figure 8 Five Largest Agriproducts Imported (Expressed in USD). Data from COMTRADE (2019)

2.3. History of the Cooperative Movement

Cooperatives in Bolivia have undergone a series of defining changes over the years. In order to understand the current situation of the cooperative movement it is necessary to analyse this process and the main institutions involved in it. For this purpose, the classification proposed by Mogrovejo and Vanhuynegem (2012) that identifies eight different stages in Bolivian cooperative history will be used. Figure 9 shows a summary of these stages and the major landmarks of this process.

First Stage (1937 – 1952)

The first cooperative initiatives in Bolivia were developed after the end of the Chaco War around 1937 (Moller, 1987). These initiatives were mostly agricultural cooperatives located near the areas in conflict by soldiers who decided to stay. These early cooperative movements were quickly adopted and expanded into other sectors like the manufacturing and mining industries. Support from the government resulted in the creation of new legislation like the Law for the Creation of Cooperatives and Sanitary Assistance of 1939 and the Supreme Decree for Consumer Cooperatives of 1940. Furthermore, the introduction of cooperatives into the Telecommunication industry, by the 1944 law, marked the creation of one of the largest cooperative sectors in the country. These movements, alongside the creation of the first Public Employee Cooperative in 1944, led to the creation of the first Bolivian Cooperative Institute for the further development of the cooperative movement (Mogrovejo & Vanhuynegem, 2012).

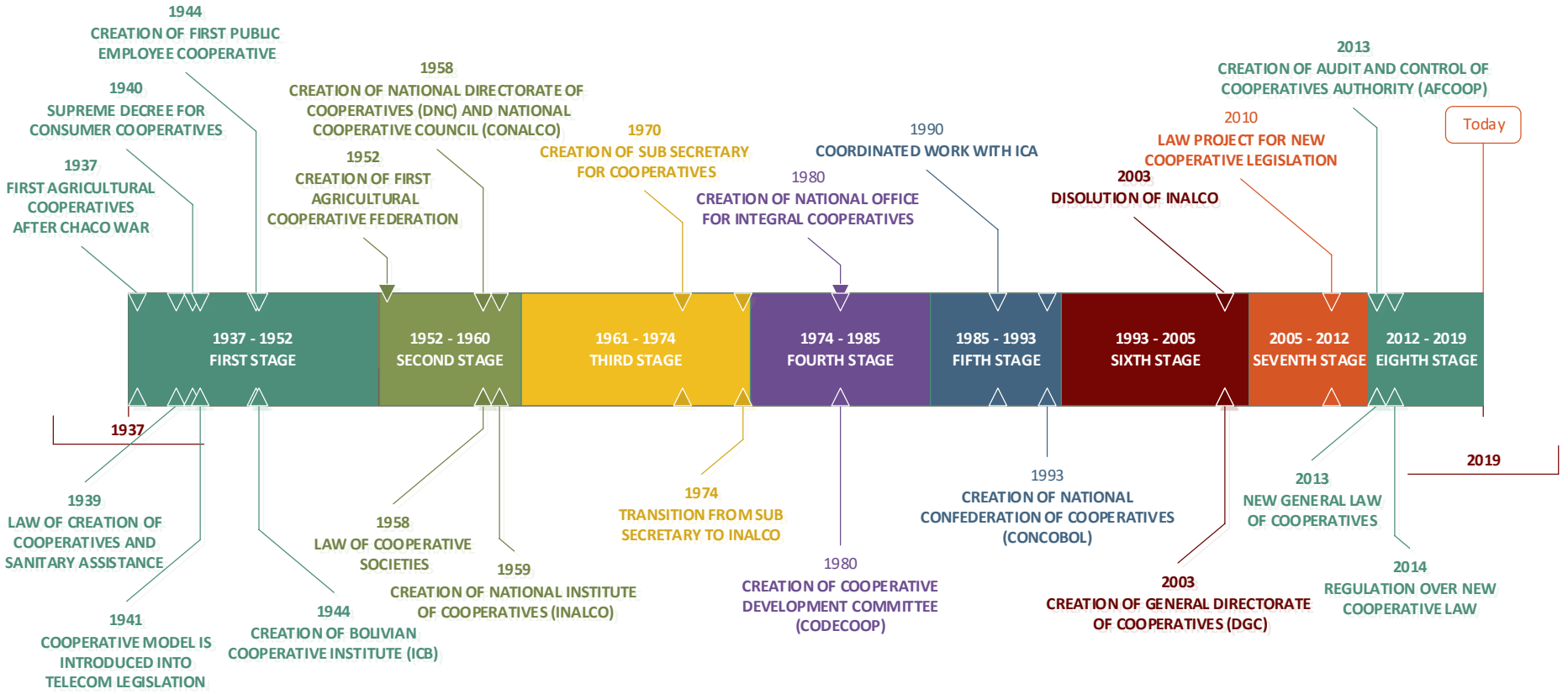


Figure 9 Timeline of Cooperative Development in Bolivia. Adapted from Mogrovejo and Vanhuynegem (2012)

Second Stage (1952 – 1960)

The National Revolution of 1952 marked another important landmark for the development of the cooperative movement for its social and political implications. The restructuring of the public sector between 1952 and 1960 led to the creation of the General Direction of Communities and Agricultural Cooperatives, representing the first agricultural cooperatives federation. However, the most important development of this stage was the creation of the Law of Cooperative Societies in 1958, which was the main law regulating the sector until 2013. This new law established the creation of two new entities regulating the cooperative sector, the National Directorate of Cooperatives (DNC), and the National Cooperative Council (CONALCO). Additionally, in 1959, the National Institute for Cooperatives (INALCO) was formed with support of public universities to provide training and extension services to cooperatives.

Third Stage (1960 – 1974)

The third stage of cooperative development in Bolivia was characterised by a constant change in the nature of the regulatory system for cooperatives. In 1970, the Sub Secretary of Cooperatives, dependent of the Presidency was created to oversee cooperatives. However, after several organisational reforms in the regulatory organs, the Sub Secretary transitioned into INALCO that was dependent of the Ministry of Labour and becoming the major regulatory entity (Ocampo, 1987).

Fourth Stage (1974-1985)

The fourth stage of cooperative development was focused in the institutionalised integration of cooperatives according to its economic sectors (Mogrovejo & Vanhuynegem, 2012). Because of this, important federations, under the oversight of the National Office for Integral Cooperatives, were formed during the late 70's and early 80's. Those federations were: The National Federation of Credit and Savings Cooperatives (FENACRE), and the National federation of Mining Cooperatives (FENCOMIN). As a result of this process, the creation of the Cooperative Development Committee took place to cement the integration of the cooperative initiatives. Additionally, the return to democracy in 1982 brought new perspectives for the modernisation of the cooperative legislation that did not come to fruition.

Fifth Stage (1985 – 1993)

With the new economic model implemented in 1985 to stabilise Bolivian economy also came a clearer openness to international cooperative structures. This was evident by the growing influence of the International Cooperative Alliance (ICA) on the integrational efforts (Mogrovejo & Vanhuynegem,

2012). This process culminated in the creation of the Confederation of Bolivian Cooperatives (CONCOBOL) in 1993, with representation from the major cooperative federations across the country.

Sixth Stage (1993 – 2005)

The sixth stage of cooperative development was mostly an audit process to the cooperative movement, focused on the telecommunication cooperatives. After several accusations of embezzlements and lack of transparency in the election processes of the major telecommunication cooperatives, a governmental intervention was initiated led by INALCO. This process, however, ended with the dissolution of INALCO and the creation of the General Directorate of Cooperatives (DGC) in 2003.

Seventh Stage (2005 – 2012)

After the election of Evo Morales and the implementation of the new Constitution in 2009, the cooperative movement was focused on trying to adapt the current legislation to the new political environment of the country. This was influenced by the fact that the existing legislation dated back to 1958. The reform movement was led by DGC and CONCOBOL, alongside international support from organisations like the ILO and SOCODEVI, resulting in a proposed law in 2011. This proposal was then discussed by several cooperative sectors and served as the basis for the new legislation that would be approved in 2013.

Eighth Stage (2012 to present)

With the approval of the new Cooperative Law in 2013 began the current stage in cooperative development in Bolivia. The new legislation incorporated more modern concepts of cooperative structure and the concepts of pluralism introduced in the new Bolivian Constitution (Mogrovejo & Vanhuynegem, 2012). The new cooperative law was issued in 2013 and the additional regulation was enacted in 2014. From that moment on, there was a period of adjustment of the existing cooperatives conforming to the new model. This also meant the transition from the DGC to the Audit and Control of Cooperatives Authority (AFCOOP). The new structure of the cooperative movement in Bolivia established by the legislation will be explained in detail on the next section. However, there is not much information written about the effects of this new reform on the cooperative movement in Bolivia.

The implementation of the new legislation required all the cooperatives working in the country to update their legal status and comply with the new requirements established by it. However, despite the efforts of AFCOOP to regulate the existent cooperatives, by 2020 only close to 24% of the first level cooperatives, 58% of the central cooperatives, and 47% of the federations had updated their

status. In 2020 there were 1427 first level cooperatives, 38 central cooperatives, and 23 regional and national federations registered under the new legislation. Figure 10 shows the distribution of the cooperatives currently active in the country according to their industry and Figure 11 shows the distribution according to their region.

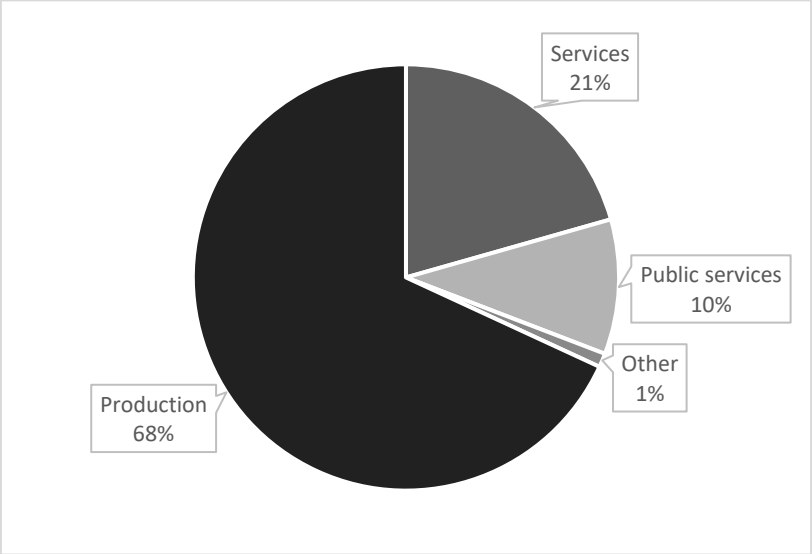


Figure 10 First Level Cooperatives According to Their Industry. Data from (AFCOOP, 2020)

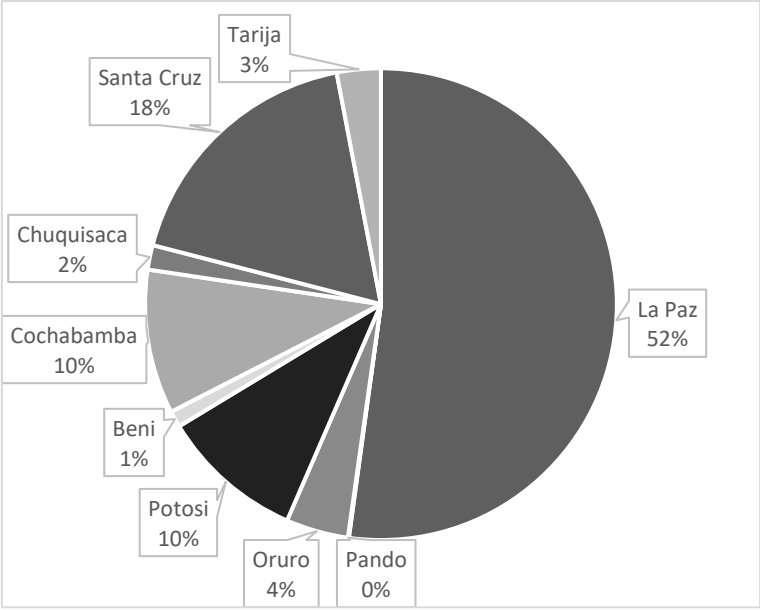


Figure 11 First Level Cooperatives According to Their Region. Data from (AFCOOP, 2020)

2.4. Current Bolivian Cooperative Legislation

The new Cooperative Law in Bolivia was the product of a long process of modernisation of the previous cooperative legislation environment. Approved in 2013 and fully regulated a year later, this Cooperative Law replaced the previous law that had governed the cooperative sector since 1958. The

modifications in the new law were made considering the way cooperatives had developed over the last half century and the influence of the cooperative principles stablished by the ICA (Arrazola, 2019; Mogrovejo & Vanhuynegem, 2012). However, because this law is very extensive and detailed, the analysis will be limited to its dispositions over nature of cooperatives, membership, governance, oversight institutions, and principles of association.

The law considers cooperatives as non-profit associations formed voluntarily and aimed towards solidarity. This non-profit element is emphasised in the law by stating that the objective of the cooperative must not be to enrich its members or accumulate profit. Additionally, the law recognizes that cooperatives must have autonomous and democratic structures and functioning. The law also states that, because of the social objectives of cooperatives, the government must incentivise their development and protect it within the principles of "plural economy." Furthermore, the law states that the cooperative principles are the following: Solidarity, equality, reciprocity, equality in distribution of benefits, social orientation, and non-profit by its members.

The law establishes that all cooperatives must work within a five-level associative scheme. The first level of cooperatives is made by the "grassroot cooperatives". These are the cooperatives made by individuals and they represent the basic unit of the cooperative movement. The second level is made by the central cooperatives. These centrals must aggregate cooperatives within the same economic sector. The third level are the regional federations. These federations can be established within the geographical region or by economic sector. The fourth level are the national federations. The law establishes that there must only exist one national federation by economic sector. Finally, the fifth level is made by CONCOBOL as the maximum representative of cooperatives in the country. The law establishes that all cooperatives must be part of the immediate superior level, and if there were none, the association goes to the next level of cooperatives. Figure 12 shows a graphic representation of this structure

In terms of membership, the law establishes that cooperatives must have open entry and exit policies for its members. The law establishes that there must not be any preferential treatment for older members or founders of a cooperative and that all members are equal. It also states that the devolution of shares must be done within 18 months of the exit solicitude. In terms of the nature of its members, the law establishes that for members, the work must be personal and cannot be delegated to third parties, except for temporary exceptions. This law also states that cooperatives cannot hire employees outside of management, technical or consultancy roles. In terms of property and equity, the law establishes that all property is collectively owned, and that equity must be distributed among a solidary fund, a legal reserve, an education fund, and a social prevision fund.

Additionally, it states that cooperatives are not allowed to have external investors within the equity structure of the cooperative.

The law establishes that governance within the cooperatives must be autonomous, democratic, and egalitarian. This means that, within the cooperatives, every member is entitled to one vote, regardless of their size of throughput. Additionally, it establishes that a General Assembly of Shareholders must appoint a Council of Administration, a Council of Surveillance, and a Disciplinary Tribunal to oversee the operation of the cooperative. The head of this General Assembly and the councils must serve for a term of three years with the possibility of one continuous re-election after the term. The General Assembly must have at least three ordinary sessions per year, and as many extraordinary as they seem fit. On first-level cooperatives, each member is entitled to one vote regardless of their throughput levels, as established by the legislation. However, the legislation opens possibilities for different voting structures at second-level cooperatives based on their size.

Finally, the cooperative law establishes three main institutions in charge of overseeing and fomenting the cooperative movement: The Cooperative Authority (AFCOOP), The National Confederation of Cooperatives (CONCOBOL), and the Permanent Advisory Council for the Foment of Cooperatives. The AFCOOP is the authority in charge of regulating and controlling the cooperative movement in the country. They are responsible, among other things, of approving internal regulations, monitoring elections, authorising operations, and intervening cooperatives that do not comply with the law. As a counterpart, CONCOBOL is the matrix organisation for the representation of cooperatives. Their labour is to channel the needs of the different levels of cooperatives and represent them before governmental agencies and other regulatory instances. Finally, the Advisory Council is formed by the Ministry of Labour, the Ministry for Planning, two Ministries according to the industrial sector, and the President and Vice President of CONCOBOL. Their objective is to analyse, elaborate, and evaluate proposal for public policy that strengthens and help the development of the cooperative movement in Bolivia. However, this latter entity has not been implemented to date.

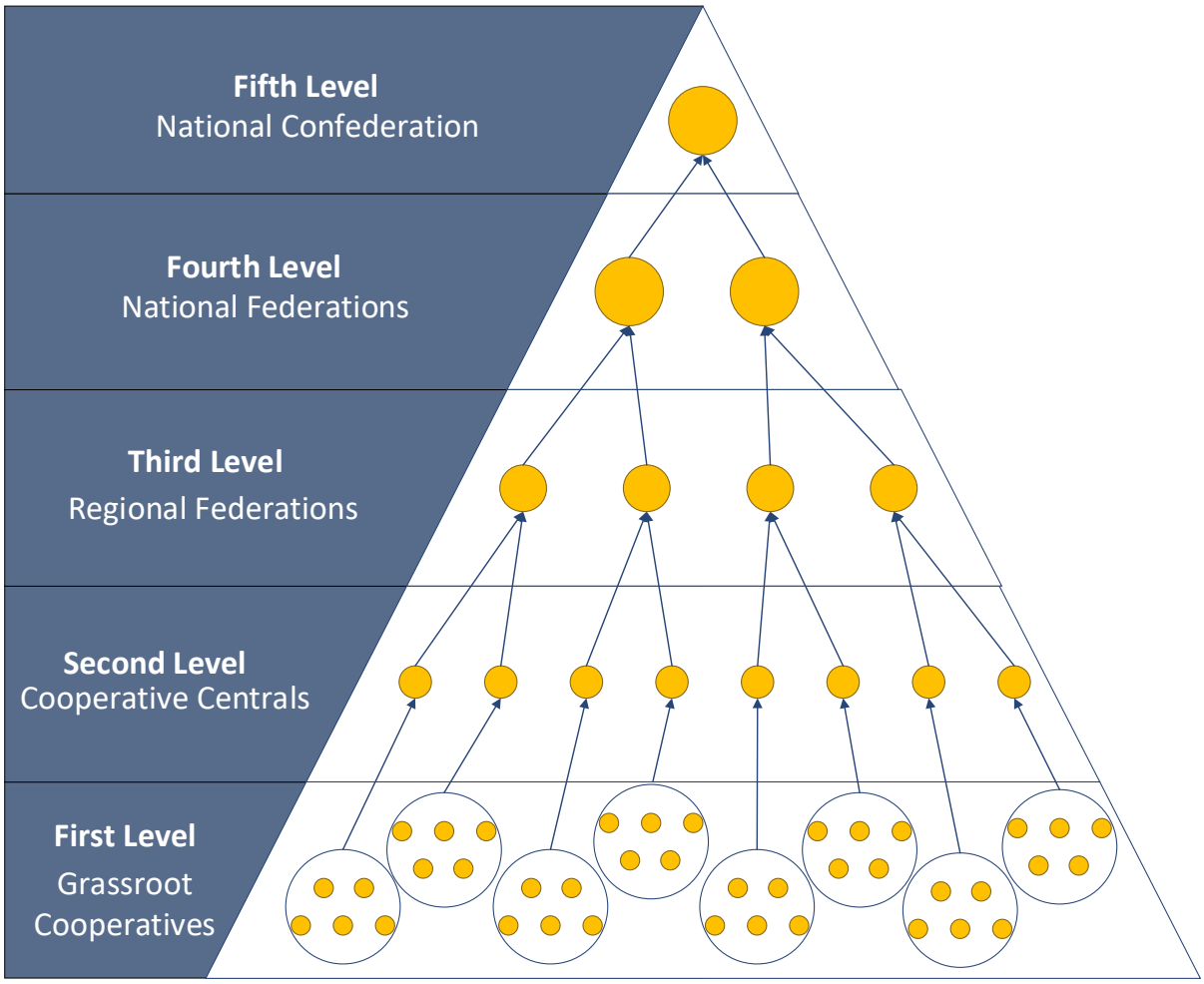


Figure 12 Structure of the Cooperative Movement in Bolivia

CHAPTER 3. Literature Review

This chapter will focus on reviewing the existing literature on cooperatives and the factors that contribute to their success. The first section is focused on defining the concept of a cooperative and providing a summary of their evolution. Then, the framework of the life cycle of cooperatives will be explained. The third section will focus on reviewing the factors that contribute to the success of cooperatives according to the literature. Finally, the last section will focus on analysing the challenges that cooperatives most commonly face.

3.1. Cooperative Definition

Cooperatives are a form of social organisation that helps its members to manage their resources in a joint manner to achieve better market conditions (Harris, Stefanson, & Fulton, 1996). However, the implications of cooperatives go beyond the economic aggregation of its members resources (ICA, 2019). This is because the social factors bring cooperatives together represent an important element for its members. Additionally, cooperatives continually change and adapt to the different circumstances they operate in (Hansmann, 2000). For these reasons, defining what cooperatives are and how they are evolving is important for this study.

The definitions for a cooperative are varied and there exists no consensus among different authors (Evans & Meade, 2006). For this reason, the definitions more commonly accepted will be reviewed and contrasted. The International Co-operative Alliance (ICA) defines a cooperative as "*an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise*." (ICA, 2019). Additionally, the ICA states that cooperatives are based on a system of values and principles that define the relationship between its members and the objective of the cooperative. However, this definition is very broad and makes difficult the task to derive a functional definition of a cooperative.

The United States Department of Agriculture (USDA) presents another definition for a cooperative that is focused on the role of its main components. The USDA defines a cooperative as "*a business owned and democratically controlled by the people who use its services and whose benefits are derived and distributed equitably on the basis of use*" (Frederick, 2012, p. 1). The definition provided by the USDA also states that the members of a cooperative benefit on two main ways from it: by the amount of throughput (rate of production) they generate, and by the allocation of earnings related to that throughput. This introduces the notion of the three basic cooperative principles identified in US cooperative legislation: user-ownership, user-control, and user-benefit (Hardesty & Salgia, 2004)

Hansmann (2000) establishes two main differences between cooperatives and investor owned firms: the nature of capital structure, and the allocation of voting rights. According to the author, capital in cooperatives is arranged for a fixed period and not perpetually, as in the case of Investor-owned Firms. Moreover, voting rights in Investor-owned Firms are usually allocated by one-share-one-vote rules whereas in cooperatives, voting rights can be allocated following several different policies according to their individual context.

Evans and Meade (2006) propose another functional definition of a cooperative. This definition establishes a cooperative as "*an organisation in which those who transact with (i.e. "patronise") 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. 10). This definition encompasses the principles of member-use, member-control, and member-benefit of cooperatives while not making assumptions about their voting allocation systems or their capital structures.

However, it is worth noting that definitions for cooperatives can also depend on the regional context of the cooperative. For example, in Latin America, the cooperative movement employs a term that encompasses the social and cultural implications of being a member of a cooperative, *cooperativismo*, that differs from the traditional view of membership (Sanchez, 2017). Additionally, cooperatives in Latin American countries, especially the Andean ones, carry deep implications of traditional forms of cooperation that pre-date the current conceptualisation of cooperatives (Vuotto, 2017; Walsh-Dilley, 2013).

3.1.1. Evolution of Cooperatives

Cooperation is one of the oldest social norms in the generation of human societies. It is for that reason that establishing the exact origins of cooperatives is not a simple process. Some authors establish that cooperatives formed in England around the nineteenth century, whereas others consider that it took place in Philadelphia in mid-1700's (Birchall, 1997; Frederick, 2012).

However, one of the most recognized landmarks for cooperative development was the creation of the Rochdale Cooperative Principles (Conover, 1959). These principles were established by the Rochdale Society of Equitable Pioneers in 1844 in England. The principles established by this early cooperative set the foundations for what would be the cooperative movement in the years to come (Frederick, 2012). Table 2 shows a list of the Rochdale Principles.

Table 2. Rochdale Principles

Rochdale Principles
Open Membership
One member, one vote
Cash Trading
Membership education
Political and religious neutrality
No unusual risk assumption
Limitation on number of shares owned
Limited interest on stock
Goods sold at regular retail prices
Net margins distributed according to patronage

Note: Data from Frederick (2012, p. 4)

After the establishment of the Rochdale Principles, the newly formed International Cooperative Alliance established a set of principles to develop the cooperative movement internationally. The ICA adopted seven of the Rochdale Principles originally in 1937. These seven original principles, stated in Table 3, represent the basis for what would be known as traditional cooperatives. However, two more revisions of these principles took place in 1966 and 1995 to account for the changes in cooperative development. The principles adopted in 1995, also shown in Table 3, still represent the main characteristics of how cooperatives are recognised internationally.

Table 3. Evolution of ICA Principles

ICA Principles 1937	*ICA principles 1995*
Open Membership	*Voluntary and open membership*
One member, one vote	*Democratic member control*
Distribution of the surplus to the members in proportion to their transactions	*Member economic participation*
Limited interest on capital	*Autonomy and independence*
Political and religious neutrality	*Education, training, and information*
Cash trading	*Cooperation among cooperatives*
Promotion of Education	*Concern for community*

Note: Data from ICA (2004, 2016)

Another important milestone in cooperative development was the creation of New Generation Cooperatives. Due to several limitations that the traditional cooperative model presented, such as equity constraints and non-transferability of ownership rights, new models of cooperatives started to develop (Chaddad & Cook, 2004). These New Generation cooperatives originated in the Midwest of the United States and presented non-traditional claim-rights structures (Harris et al., 1996). Among the different structures that these New Generation Cooperatives presented, the most recognisable ones referred to the structure of membership, transferability of ownership, and nature of equity

(Grashuis & Cook, 2018). Additionally, the numerous ways in which New Generation Cooperatives have been successfully implemented has been linked to the nature of the communities where they are developed and the nature of its members (King, 2001).

3.1.2. Types of Cooperatives

There are several approaches to categorise cooperatives. When analysed from the perspective of the nature of its patrons, there are six commonly recognised kinds of cooperatives: Producer Cooperatives, Purchasing/Shared Services Cooperatives, Banking Cooperatives, Insurance Mutuals, Consumer Cooperatives, and Worker Cooperatives (NZ Coop, 2019). All these cooperatives serve different purposes but usually operate under the same principles established by the ICA.

From the point of view of ownership, Chaddad and Cook (2004) establish a typology of cooperatives based on the nature of its ownership rights. This typology is divided into seven categories, one of them is the traditional cooperative structure, the next five are non-traditional cooperative structures and the seventh one refers to Investor Oriented Firms (IOFs). The five non-traditional cooperative structures are defined as follows:

1. Proportional Investment Cooperatives. They refer to cooperatives where patrons are expected to invest according to their levels of patronage with the cooperative.
2. Member Investor Cooperatives. These cooperatives distribute their returns in base of not only patronage, but also the level of investment of its patrons.
3. New Generation Cooperatives. In this model, ownership rights can be traded and appreciated. Additionally, capital investment is estimated in base of expected patronage levels and is usually non-redeemable to a certain extent.
4. Cooperatives with Capital Seeking Companies. In these cooperatives, investors obtain ownership rights through an external firm that is totally or partially owned by the cooperative. The introduction of capital in these cooperatives is not direct but goes through a subsidiary firm.
5. Investor-Share Cooperatives. This kind of cooperatives have different classes of shares, some of which can be obtained like an IOF by non-patron investors. However, the shares available for external investors usually entail receiving dividends but no controlling rights.

These different models of ownerships among cooperatives reflect the need for more hybrid structures to overcome certain risks and limitations created by the specific nature of each cooperative (Chaddad & Cook, 2004).

3.2. Life Cycle of Cooperatives

Cooperatives, as most other organisations, go through a series of stages in their development. In order to analyse how cooperatives adapt to the different stages of their development, Cook (2018) proposed a framework in which the life cycle of a cooperative is divided into five different stages. This framework is helpful to analyse the context and different challenges that cooperatives face at every stage of their growth. The five stages proposed by Cook (2018) are: economic justification, organisational design, growth – glory – heterogeneity, recognition and introspection, and choice. Figure 15 shows the evolution of these stages for the cooperative.

3.2.1. Economic Justification

The first phase of agricultural development described in Cook (2018) life cycle framework is the recognition of the economic justification for the creation of cooperatives. Several studies have been conducted studying this phenomenon and the results observed suggest that during this stage, future members determine that the most efficient response to market failures and negative economic conditions is the generation of a cooperative initiative (Hansmann, 2000; Sexton & Iskow, 1988). The initial efforts to start the cooperative are mostly being financially unrewarded and set the basic spirit upon which the future cooperative will be established (Cook, 2018; USDA & Rural Business–Cooperative Service, 2001).

3.2.2. Organisational Design

The next phase in cooperative development is referred to as the process of formally establishing the cooperative's organisational structure. This stage is particularly important because it will define the governance and management structures as well as the nature of property rights (Cook, 2018). The correct definitions of these aspects and the mechanisms elected will define how efficiently the cooperative will function and how residual rights and representation for members will be defined (Iliopoulos, 2015). Failure to effectively define these factors can create considerable inefficiencies and problems that could potentially threaten the survival of the cooperative (Borgen, 2004; Cook & Iliopoulos, 2000; Nilsson, 2001). A more detailed analysis of the potential challenges created by unclear definitions of property rights and residual control will be elaborated further in this chapter.

3.2.3. Growth - Glory – Heterogeneity

After having defined the economic reasons to form a cooperative and having designed the formal structure in which it will operate, the cooperative experiences growth in their operations, patronage, and member base. The growth experienced during this phase generates positive returns for the cooperative and its members approach a peak in cooperative health according to the framework

proposed by (Cook, 2018). However, the measurements used to determine the cooperative's health can be decisive to effectively portray the situation of the cooperative. Measures that focus only on conventional metrics like financial performance may present ambiguous or imprecise information on the cooperative's development, thus making the design of this metric relevant for evaluating this growth (Zeuli, 1999).

However, as the member base continues to growth, heterogeneity in preferences is also introduced to the cooperative. The introduction of heterogeneity and member diversity can represent a boost in development of the cooperatives and its solutions to market failure (Cook, Chaddad, & Iliopoulos, 2004; Wilson, Ostrom, & Cox, 2013). Yet, this heterogeneity can also create frictions in the cooperative and portfolio problems into the cooperative (Apparao, Garnevska, & Shadbolt, 2019; Cook & Iliopoulos, 2000; Kalogeras, Pennings, van der Lans, Garcia, & van Dijk, 2009). Cook (2018) proposes that the cooperative can make adjustments to its policies and control mechanisms during this period to deal with non-structural challenges created by this heterogeneity, also called tinkering, that can ameliorate the negative effects on the cooperatives. However, if these challenges become structural, rendering tinkering mechanisms ineffective, it will lead to the next stage of the life cycle.

3.2.4. Recognition and Introspection

This phase of the life cycle refers to the understanding of the structural challenges arising from the process of adapting to the growth in the previous stage. This period occurs because of property rights and residual claim rights that are not clearly defined or do not represent the current state of the cooperative (Borgen, 2004). The problems created by these inadequate definitions significantly effect the efficiency of the cooperative and have a negative effect on the overall health of the cooperative (Borgen, 2004; Cook, 2018; Nilsson, 2001). The problems that arise and lead to this phase of the cooperative life cycle are detailed in the 'challenges to cooperative development' section of this chapter.

3.2.5. Choice

After having analysed the structural factors that are creating challenges and inefficiencies in operations, the cooperative faces an important choice in how they will tackle these problems. This choice represents a parting point on whether the cooperative will survive and adapt successfully or begin to break up and cease its activities (Cook, 2018). The framework identifies four different possible path they can take: the status quo position, to spawn, to exit, or to reinvent its organisational structure.

The status quo position refers to the continuation of the current structure of the cooperative which becomes problematic. This stance usually stems from the inability of the cooperative to find a viable solution to tackle the issues sprouting up in the cooperative. Additionally, this stance usually represents the postponement of a future exit strategy (Cook, 2018).

The option of spawning refers to the separation of the original cooperative into a separate venture (Paul, Josh, & David, 2005). These new ventures usually have a similar nature as the "parent" organisation but reflecting the characteristics of the group of members that separated from the cooperative (Burress & Cook, 2010). This option can reduce the presence of portfolio problems within both organisations (Cook, 2018).

The exit option refers to the dissolution of the cooperative or its transition to an investor oriented IOF structure (Cook, 2018). The election of this solution depends heavily on the valuation of assets and the costs of transition (Schrader, 1989). Additionally, this option is chosen as a response of the inefficiency of the cooperative to respond to market failures (Cook, 2018).

Finally, the last option refers to the reinvention of cooperative structure from a structural perspective. This reinvention responds to an adjustment of the definition of property rights an residual ownership claims that were not efficiently defined previously (Cook & Iliopoulos, 2000; Nilsson, 2001). The solutions presented to these definitions vary according to the problem faced by the cooperative. However, literature shows that the most common solutions include the design of appreciation and trade mechanisms of shares and property rights within the cooperative (Borgen, 2004; Iliopoulos, 2015).

3.3. Factors Contributing to the Success of Cooperative Development

Several studies have been made to determine the main factors that determine the success of cooperatives. These factors are the membership structure, member commitment to the cooperative, member control mechanisms, management structures, strategic thinking, member benefits, the role of leadership, and training. This section will analyse the main factors identified in cooperatives across the world.

3.3.1. Membership Structure

The structure and nature of membership in cooperatives is the factor more commonly mentioned in the literature reviewed. However, among different studies, a wide array of aspects regarding membership have been identified. Studies done in the U.S. found that one of the most important factors for cooperative development was the existence of a large member base to generate high enough levels of output and equity within the cooperative for it to become economically viable

(Bruynis, Goldsmith, Hahn, & Taylor, 2001; Sexton & Iskow, 1988). This is important because it establishes the relationship between the structure of membership and the possibility of creating economies of scale based on patronage levels and pooling resources.

The other major factor in which membership can affect the success of a cooperative is the nature of the member base and their relationships among themselves. Studies on Polish cooperatives have shown that pre-existing business relationships among members has a strong positive correlation with successful cooperative development (Banaszak, 2008). This study also established that an efficient selection process and a large member base helps to minimise the risks related to cooperatives. In addition, the nature of the members refers to the common characteristics that define the members of a cooperative, like age, average income, access to education, and formal training (Garnevska, Liu, & Shadbolt, 2011). These factors have a crucial impact on membership participation and perception of the cooperative, particularly in developing countries (Garnevska et al., 2011; Zheng, Wang, & Awokuse, 2012). Additionally, the structure of the cooperative also has an important effect on membership. The stage of the life cycle the cooperative and its business model are in determine the cooperative's capacity to draw new members, and can affect its long-term survival (Battilani & Schröter, 2012). Finally, strong links generated by cultural and community-based relations among members increase the likelihood of cooperation among members (Pansera & Rizzi, 2020; Ranjan, 2017)

3.3.2. Member Commitment to the Cooperative

Another important factor that contributes to the success of cooperatives is the commitment to the cooperative by its members. This is due to the fact that the consolidation process of a cooperative is a very time consuming process that requires high levels of participation and perseverance from its members (Cook, 2018; King, 2001). Moreover, commitment has shown to have a long-term effect on the cooperative and its performance because of the influence of participation on management and patronage levels (Apparao et al., 2019).

The commitment to the cooperative and its objectives has also shown to increase the trust the members have in the cooperative (Holden & Tilahun, 2018; Holland, Kitts, Silva, & Wiersma, 2013). The level of commitment and identification with the cooperative objectives increases the willingness of members to cooperate and work towards overcoming common necessities (Ranjan, 2017; Yarker, Heley, & Jones, 2020). In addition to this, the literature also shows that establishing a system of penalties to prevent opportunistic behaviours is also necessary to maintain commitment in terms of patronage (Casaburi & Macchiavello, 2015).

3.3.3. Member Control Mechanisms

The development of clear member control mechanisms within a cooperative is an important factor of cooperative success because it determines the mechanisms to effectively coordinate the efforts of its members and their ability of exercising control over the cooperative (Birchall, 2018; Chaddad & Cook, 2004). However, establishing an effective governance structure can be challenging depending on the characteristics of the cooperative and the legal framework in which this operates (Birchall, 2018; Darrell & John, 2016).

The first element identified was that, in order to be effective, governance structures and ownership rights must be clearly defined (Cook, 2018). An ambiguous definition of ownership rights and residual rights can result in diminishing member participation within the cooperative and reduced effectiveness in governance mechanisms (Birchall, 2018). Additionally, the effect of governance definitions included in a country's cooperative law has a great effect in cooperative development because it determines the basic governance structure that a cooperative can have in that context (Garnevska et al., 2011). However, the implementation of ineffective governance structures can increase the risks faced by the cooperative and eventually determine its long-term permanence in the market (Cook, 2018; Iliopoulos, 2015).

The other important factor regarding governance structure in cooperatives is whether there is a widespread understanding of its mechanisms among the members of the cooperative. Although, the designing of effective governance policies can be assumed to be the most important aspect of governance, this structure can be rendered ineffective by the lack of connection between the representative entities established, like the board of directors, and the members of the cooperative (Birchall, 2018). This disconnection can occur as a result of a lack of knowledge by the members of these policies and the control mechanisms they can use (Garnevska et al., 2011). This is particularly important for cooperatives with a member base that has had restricted access to education and formal training (Fulton & Giannakas, 2001; Paranque & Willmott, 2014). However, some studies also show that there is a trade-off between the participation of members in these control mechanisms and the level of specialisation required to perform the duties effectively (Adamišin & Kotulič, 2013; Brandão & Breitenbach, 2019).

3.3.4. Management Structures

Cooperatives and IOFs work within the same logic of generating returns for their investors. However, the major difference between them is that in cooperatives, investors are also patrons and users of the services generated by the cooperative. For this reason, generating management, financial, and

strategic structures that are adapted to this form of organisation is important for cooperative development (Brandão & Breitenbach, 2019; Kinnunen, 2019).

In terms of management, several studies have found that the most important factor for cooperative success is to have a professional management team that has skills fit for cooperative management. It has been observed that having a full-time management team and board of directors with experience in cooperative management has a positive impact on cooperative development (Bruynis et al., 2001; Sexton & Iskow, 1988). This is because having an experienced management team helps to decrease the transaction costs related to the cooperative (Bruynis et al., 2001; Bukchin & Kerret, 2020; Yarker et al., 2020). Furthermore, by generating an effective management structure, agency and portfolio risks can be minimised (Cook, 2018; King, 2001; Paranque & Willmott, 2014). Additionally, it has been observed that also developing useful communication channels among the cooperative has a positive effect on the effectiveness of management (Banaszak, 2008; Garnevska et al., 2011).

The other major factor that was found to determine the success of cooperatives was developing a sustainable equity structure and effective financial management. Ensuring that a cooperative is able to gather enough equity from its members to operate and fund projects for expanding their operations was one of the main concerns regarding a sustainable equity structure (Cook, 2018; Hardesty & Salgia, 2004). The use of different equity schemes like having revolving capital structures and redemption policies can help the planning of resources and reduce risks related to cash flow (Sexton & Iskow, 1988). Additionally, the implementation of contracts with members and clients to ensure minimum levels of throughput and equity have been found to help to minimise those risks (Bruynis et al., 2001; Zeuli, 1999). Finally, the release of timely and accurate financial reports that are available for members and management staff is important to help with the decision-making processes within a cooperative (Bruynis et al., 2001).

3.3.5. Strategic Thinking

The development of a clear strategic framework and performance indicators to achieve strategic objectives are important factors of success for cooperatives. The importance of establishing these strategic objectives to guide the long-term projection of the cooperative has been identified as a factor of success in the literature (Barati, Kalantari, Nazari, & Asadi, 2017; Kinnunen, 2019; Komulainen & Siltala, 2018; Zarafshani, Helms, & D'Itri, 2019). A poor definition of these objectives can create ambiguities in the management process and open the possibility of stagnation in the cooperative and reduce the cooperation among members (Davis, 2016; Olthaar & Noseleit, 2017). However, it has been established that having a formally defined plan is not a guarantee of successful implementation

(Siddique & Shadbolt, 2016). The development of a culture of strategic thinking within the cooperative can sometimes overcome the lack of a formal plan (Graetz, 2002).

3.3.6. Member Benefits

Sexton and Iskow (1988) found that in order to develop a successful cooperative, it has to be able to operate more efficiently than the non-cooperative competitors in its industry, thus providing economic incentives for the members. Additionally, the structure of the industry has a significant effect on cooperatives in the sense of the market power of their commercial partners, the feasibility of the creation of economies of scale, and the cooperative's capacity to fill gaps in the market that other companies cannot (King, 2001). These economies of scale maximise the profitability for farmers of being members and increases their permanence in the cooperative (Khumalo, 2014; Mera-Bastidas, Terán-López, Barrera-Ojeda, Gomajoa, & Rojas-Navarro, 2019; Schmit & Severson, 2019). The maturity of markets and the existence of the mentioned gaps in the market affect the economic relevance the cooperative has for its farmers and the motivation for new members to join (Battilani & Schröter, 2012). The increased bargaining power generated by the cooperative also reduces the costs for small scale farmers (Hidalgo-Fernández, Moreira Mero, Loor Alcivar, & González Santa Cruz, 2020; Mera-Bastidas et al., 2019). Additionally, it increases the availability of funding sources for farmers through the cooperative (Tekdemir, 2017; Woldegebrial Zeweld, Guido Van, & Jeroen, 2013).

Other important non-economic incentives are the social incentives that cooperatives provide to their members (Golovina, Hess, Nilsson, & Wolz, 2014). The support provided by the cooperative, in terms of social solidarity that includes welfare programmes for farmers, helps to overcome the hardships that farming communities usually face, especially in developing countries (Dirimanova, 2018; Woldegebrial Zeweld et al., 2013). Additionally, the existence of R&D initiatives within the cooperative reduces the individual risk for each member for the implementation of new technology, thus increasing innovation across the cooperative (Luo & Hu, 2014).

3.3.7. Role of Leadership

While member involvement in their cooperative has a vital role in its success, the presence of strong leadership has been shown to have a positive effect on encouraging this (Garnevska et al., 2011; Khumalo, 2014). The existence of leaders among the cooperative has a positive effect on reducing transaction costs, increasing cooperation among members and improving the cohesion of the group (Banaszak, 2008; Hidalgo-Fernández et al., 2020). The nature of these leaders, their levels of education, communication skills, and managerial skills define the effectiveness of leadership to increase cooperation (Khumalo, 2014; Zarafshani et al., 2019). These leaders have complex roles

depending on their position within the cooperative. Their role as board members refers to their help in defining the cooperative's vision, whereas their role as management staff is to administer the cooperative properly, and their role as a member is to generate enough throughput as an individual contributing to the cooperative (Garnevska et al., 2011). Finally, one of the strongest factors identified in guaranteeing the effectiveness of leaders in these numerous roles was high participation from the members in the election of these leaders before they occupy positions on the board (Golovina et al., 2014; Harrel, 2018).

3.3.8. Training

Training and development programmes for members helps to increase the effectiveness of leadership in the cooperative (Khumalo, 2014; Zarafshani et al., 2019). Increasing the availability of essential managerial skills increases the participation of members in the cooperative and helps them to exercise better control over operations (Banaszak, 2008; Khumalo, 2014; King, 2001; Schmit & Severson, 2019). Additionally, developing a deeper understanding of the cooperative model and its objectives also increases the efficacy of these programmes to incentivise leadership in the cooperative (Sanchis Palacio, Campos Climent, & Mohedano Suanes, 2015; Server-Izquierdo & Lajara-Camilleri, 2016).

Training programmes are particularly important for cooperatives whose member base has limited access to education or formal training because it enables the cooperative to reduce the effects of these limitations (Garnevska et al., 2011; Luo & Hu, 2014). Additionally, the existence of management training programmes, research initiatives, and other extension services help cooperatives to develop their member base and generate better results in operations and production (Banaszak, 2008; King, 2001). One of the benefits of the development of these programmes is that they increase operational efficiency, yields, and technological innovation for its members and as a result the cooperative as a whole (Banaszak, 2008; Sanchis Palacio et al., 2015; Schmit & Severson, 2019).

3.4. Challenges to Cooperative success

The concept of cooperatives as a business model has faced several criticisms by economists due to perceived inefficiencies, unclear property rights, and agency costs (Nilsson, 2001). However, when studies comparing the performance of cooperatives and their IOF counterparts have been made, they have not found consistent results that prove that either organisational structure performs inherently better than the other one (Battilani & Schröter, 2012; Cook & Iliopoulos, 2000; Hardesty & Salgia, 2004). Despite this, due to the particular nature of cooperatives and their relationship with their user-owners, several elements have been identified that generate challenges to the development and survival of cooperatives (Borgen, 2004; Cook, 2018). This section will analyse the main factors found

in cooperative literature that can have a negative effect on cooperatives. First the nature of agency costs and unclear property rights will be analysed in the context of the cooperative model. Then, investment and decision related problems will be explained. Finally, the main challenges generated by external factors will be analysed.

3.4.1. Agency costs and Unclear Property Rights

Because of the democratic nature of cooperatives in terms of their ownership and control structure, cooperatives face a series of challenges in terms of agency costs and definition of property rights (Cook & Iliopoulos, 2000; Nilsson, 2001). These challenges are related to each other because of the structures present in the organisation.

The problem with agency costs is based on the existence of an asymmetry of information between the agent and the principal that generates the possibility of fraudulent behaviour. In agency theory, there exists an agent that acts on behalf of a principal that has the residual right to benefits, but the agent is in charge of directing the organisation towards achieving those benefits (Nilsson, 2001). However, problems arise when the agent's action does not necessarily follow the best interest of the principal (Eisenhardt, 1989). Because of this, three scenarios are considered as problematic for agent-principal relationships: when there is a difference between the interests of the agent and the principal, when the principal cannot perfectly access the information available to the agent, and when the principal cannot monitor the actions of the agent in a cost-effective manner (Barney & Hesterly, 2006). According to agency theory, these risks can be minimised with a system of efficient financial incentives to align the incentives of the agent with those of the principal. However, because of the non-concentrated nature of ownership in cooperatives, those problems tend to be more complicated and difficult to counteract (Borgen, 2004; Nilsson, 2001).

Problems related to property rights not being clearly defined within the cooperative arise from the distribution of residual rights. Property rights within the cooperative are defined between two categories: formal control rights, and rights to the profits generated after paying all obligations, also known as residual rights (Hansmann, 2000). The problem with the assignment of residual rights lies in the way they can be distributed and the role they have on decision-making within the cooperative (Borgen, 2004). Additionally, because in cooperatives all increases in equity are usually tied to an increase in patronage levels, increases in the levels of equity can also increase the level of heterogeneity in preferences among members (Cook, 2018; Cook & Iliopoulos, 2000). Although heterogeneity in itself has positive and negative effects on cooperatives, it increases the complexity of property rights assignation and can create friction among the members (Apparao et al., 2019; Cook, 2018; Kalogeras et al., 2009).

These two issues have been identified as the main framework to analyse challenges to cooperative development. The presence of these factors creates an incentive problem within the cooperative, thus deteriorating commitment to the cooperative (Borgen, 2004; Cook, 2018; Grashuis & Cook, 2018). Furthermore, within the framework of agency and property rights theory, seven problems are commonly associated to cooperatives: Common property problem, Horizon problem, Portfolio problem, monitoring problem, follow-up problem, Influence cost problem, and decision problem (Borgen, 2004; Nilsson, 2001). Borgen (2004), however, classifies them within two groups: the first three problems are classified as Investment-related problems, and the last four as Decision-related problems.

3.4.2. Investment Related Problems

The three problems described here represent the most common issues that occur when the definition of common property rights affect the decision-making process of the cooperative (Borgen, 2004). A common aspect among all these problems is the fact that they arise from the unavailability of mechanisms to appreciate and transfer of member property rights (Cook & Iliopoulos, 2000).

Common property problems, also known as free-rider problems, occur when collective property ownership gets negatively affected by individual action (Nilsson, 2001). This problem can exist in two forms: external and internal.

The external free rider problems are created by unclear, non-tradeable, or insecure property rights among the cooperative (Cook & Iliopoulos, 2000; Iliopoulos, 2015). This property rights definition create a scenario where members and non-members of the cooperative bear the full costs and/or benefits created by the actions of the cooperative (Cook & Iliopoulos, 2000).

In terms of the internal free rider problems, it refers to the scenario when new members of a cooperative receive the same residual rights and patronage as existing members bearing only the costs of patronage per unit of patronage (Cook & Iliopoulos, 2000). This is also created by the non-existence of valuing and trading mechanisms in nominal shares for members within the cooperative (Borgen, 2004). New entrants, by having access to all assets and benefits established in the cooperative, dilute equity among existing members, thus affecting the incentive to cooperate and increasing friction among members of the cooperative (Borgen, 2004). This also affects the cooperative ability of raising new capital and affect the way investments are done in the cooperative (Nilsson, 2001).

Horizon problems occur when the benefits of residual claiming rights for members in the cooperative goes beyond their expected membership in the cooperative (Borgen, 2004). This problem restricts commitment to the cooperative by allowing a group of members to demand a return on their

patronage for shorter terms than the rest of the cooperative (Cook, 2018). These differences in the planning horizon of investments reduces the efficiency of investment decisions (Nilsson, 2001). Additionally, because of the limitations it puts on the planning horizon for members, it deters the introduction of future long-term based projects that could be beneficial for the cooperative in favour of more short-term based projects (Borgen, 2004; Nilsson, 2001).

This problem generates from restrictions on transferability of residual claims and limitations on liquidity created by the lack of a secondary market for trading rights (Cook & Iliopoulos, 2000). A way of dealing with these problems is by negotiating mechanisms that extend the residual claims, like leasing. However, these mechanisms may not be effective depending on the structure of investment preferences by the members (Cook, 2018). The most effective way of dealing with this problem is by the introduction of a mechanism to trade ownership shares to members with a more long-term horizon (Borgen, 2004)

The **portfolio problem** within a cooperative also occurs due to lack of transferability, liquidity and appreciation mechanisms for cooperative shares (Iliopoulos, 2015). The lack of these mechanisms creates barriers for members to adjust their investment portfolios according to their risk preferences (Cook & Iliopoulos, 2000). The risk assumed by the members of the cooperative represents an average of all the preferences within the member base. However, this average, considering the heterogeneity of preferences, results optimal for only a fraction of the members (Nilsson, 2001). Because of this, members can influence the cooperative's portfolio to lower its risk even at the cost of expected returns (Cook & Iliopoulos, 2000).

3.4.3. Decision Related Problems

The problems presented here occur based on agency problems. These problems difficult the decision-making process in a cooperative creating inefficiencies in their functioning (Borgen, 2004). A common topic that emerges from these problems is the heterogeneity of interests among members and increasing agency and control costs within the cooperative (Nilsson, 2001).

Monitoring or control problems relate to the structure of the relationship between agents, professional management, and principals, members, in a cooperative environment. These problems arise when there is a divergence between the interests of both groups, thus creating non-efficient allocation of resources in the cooperative (Iliopoulos, 2015). The non-existence of trading markets for residual rights increase the agency control costs by not providing a tool to reflect the effect of managerial results on share value (Borgen, 2004). This problem gets more complex with the

increasement of heterogeneity of interests among the member data base, making the cooperative objectives more ambiguous (Iliopoulos, 2015).

The **follow up problem** is created when the cooperative has a large member base that is unable to generate significant influence on the decision-making process of the cooperative (Borgen, 2004). This creates a reduction in the member's interest in monitoring the actions of the cooperative (Nilsson, 2001). However, as mentioned before, heterogeneity of preference generated by an increase of patrons during a cooperative's growth does not necessarily imply negative effects to the cooperative (Cook, 2018). This problem can generate a disproportionate power distribution between the management staff in a cooperative and the member base (Nilsson, 2001).

Influence cost problem is generated by the existence of a group of members whose interests are opposed to those of the cooperatives (Borgen, 2004). These groups can use their influence over the cooperative, for example by using lobbying mechanisms, to pursue their own selfish interests on top of the common interests of the cooperative (Iliopoulos, 2015). The costs generated by the presence of this problem can generate increasing costs for the cooperative and be the source of inefficiencies in the cooperative's operation (Iliopoulos, 2015).

The **decision problem** is closely related to the nature of the membership of a cooperative. decision problems occur when, within the cooperative, a wide array of different opinions and preference exists, making difficult the effective process of decision-making that can benefit all of those groups (Borgen, 2004). This creates a contradiction in management that, not being able to meet their members' varying interests, choose to guide themselves on market signals alone (Nilsson, 2001). This decision is particularly difficult when considering that cooperatives do not usually have access to market information from stock exchange.

3.4.4. External Challenges

The environment in which cooperatives operate has a profound effect in shaping the way cooperatives develop. A deep understanding of the country context and its nature is essential for the cooperative due to the symbiotic relationship that exist between both entities (Battilani & Schröter, 2012; King, 2001). However, the main challenges for cooperatives comes from the legal framework and the institutions that oversee cooperative activity (Banaszak, 2008). The structure of cooperative laws and the existence of stable and favourable policies towards cooperative development seem to have a positive effect on cooperatives (Banaszak, 2008). Also, the existence of clear cooperative legislation can speed the establishment process of cooperatives within a country and help to ensure its survival (Garnevska et al., 2011). However, policies and legislation aimed at subsidising cooperatives,

especially in developing countries, tend to have a negative effect in their competitiveness and long-term survival (Bennett, 2017; Medina-Albaladejo & Menzani, 2017).

In terms of the role of institutions, these serve an important role in providing support for a cooperative to develop. The role of these institutions in generating extension, consultancy, and training programmes is important for the development of cooperatives (Olthaar & Noseleit, 2017). However, when these institutions have a low level of independence from political objectives they create challenges for cooperatives because they do not allow a correct definition an implementation of policies from authorities (Mera-Bastidas et al., 2019; Woldegebrial Zeweld et al., 2013; Zarafshani et al., 2019).

The economic and political context in which the cooperative exists defines the relevance it has for its members. The level of competition and structure of the value chains where the cooperatives operate play an important role in the evolution and survival of cooperatives (King, 2001; Sexton & Iskow, 1988). Infrastructure in terms of supply chains and access to markets also determine the relevance of cooperatives in farming communities (Dirimanova, 2018; Server-Izquierdo & Lajara-Camilleri, 2016; Wassie, Hitoshi, & Masahiro, 2020). Additionally, a stable political and economic context generates better conditions for forecasting and risk analysis for the cooperatives (Faulhaber, 2000; Luo & Hu, 2014).

CHAPTER 4. Research Methodology

This chapter will focus on explaining the methodology used for this study. The chapter will be divided into five sections that explain different aspects of the study. The first part explains the identification of the research problem and the aim of this study. The next part details the research strategy selected for the study and the selection of the sites. The third part analyses the data collection process that this study follows for primary and secondary sources. The next part details the data analysis and management procedures followed for the study. Finally, the fifth part explains the significance of the study.

4.1. Research Process

This part will focus on the identification of the philosophy and approach that this study will tackle, and the aims and objectives established for that purpose.

4.1.1. Research Philosophy

An understanding of the philosophical approach of this study was fundamental for the effective application of the research process. Several approaches were identified over time to determine what the role of the researcher is in relation to the phenomenon being observed (Brinkmann, 2017). Due to the implications of research in management and the interaction between the researcher and the phenomenon analysed, Tsang (2017) observed four main philosophical perspectives that are prevalent in management research. These perspectives are positivism, postmodernism, critical realism, and pragmatism. Positivism is one of the most popular perspectives and assumes that the existence of an objective reality and that the researcher is free of bias to observe its causalities (Gephart, 2004). Postmodernism assumes that reality is subjective and socially constructed and there is no unified theory to explain it, thus the researcher analyse it based on its own preconceptions and theory (Best & Kellner, 1991). Critical realism differentiates between transitive, i.e. theories and concepts, and intransitive bodies of knowledge, i.e. the mechanisms and structures related to the phenomena, and uses them to explain the empiric patterns observed in the reality (Bhaskar, 2008). Pragmatism focuses on the use of theories and instruments to solve problems rather than to determine truth from reality while requiring a more active role of the researcher in the process (Lipton, 2004; Tsang, 2017). This study was based in a perspective of critical realism. This is because a theoretical framework was used to analyse the mechanisms that determine the success of the cooperatives. This approach recognised the bias of the researcher and focused on minimising its impact in the analysis of the data (Tsang, 2017).

4.1.2. Research Aims and Objective

The aim of this research project is to compare and contrast the factors of success and challenges of agricultural cooperatives in Bolivia

To achieve this aim, the following objectives have been established:

- To develop a theoretical framework of factors contributing to the success of cooperatives.
- Compare and discuss the common factors of success in agricultural cooperatives in Bolivia.
- Compare and discuss the common challenges of agricultural cooperatives in Bolivia.

4.2. Research Strategy

Yin (1989) identified five different research strategies: experiment, survey, archival analysis, history, and case analysis. Additionally, he defined three criteria to decide which research strategy fits the objective of the research: the nature of the research question, degree of control over behavioural events, and the focus on contemporary events. Considering that the main aim of the research is to compare and contrast the factors of success of agricultural cooperatives, this will require the analysis of at least two cooperatives in the country. Additionally, there are no requirements for control over behavioural events because this research is based on observation of the nature of the practice. Also, the focus is on contemporary events rather than historical ones. For these reasons, the strategy that fits best with the objectives of this research is the multiple case study analysis. A case study is defined as "*an empirical inquiry that investigates a contemporary phenomenon within its real-life context when the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used" (Yin, 1989, p. 23)*. For this purpose data must be collected in the context and the phenomenon without separating one from the other and avoiding limitations on the number of variables observed (Yin, 2016). This kind of in-depth observation requires the use of qualitative data analysis (Orum, Feagin, & Joberg, 1991). The double case study will focus on analysing qualitative data to obtain insights on the factors of success of the cooperatives.

4.2.1. Site Selection

Given a choice in selection of sites for the case study the objective was to select cases that were "information-rich" and that provided a large amount of insights to learn about the objectives of the research (Gray, 2001). Yin (2016) provides four different ways of defining the sites for fieldwork: a group of people that share a common bond, residents of a small geographic area, institutional scenes, and unrelated groups of people. For the purposes of this study, the definition of the sites was based on an institutional approach.

Two successful cooperatives of the country were selected for the case study: El Ceibo and CAICO. Both of these cooperatives were identified based on their size, longevity, and representativeness of their region (Villaroel, 2014). El Ceibo is a second level cooperative based in the northern region of La Paz and CAICO is based in a Japanese colony north of Santa Cruz. Additionally, the main institutions overseeing the cooperative movement were included in the study. These institutions are The Cooperative Audit and Control Authority (AFCOOP), The National Federation of Agricultural Cooperatives (FENCOA), and the General Directorate of Public Policy, Development, Protection, and Promotion of Cooperatives (DGPPFPPC).

4.3. Data Collection

Two main questions needed to be answered to define the methods of data collection: what data to collect and how often to collect it (Maxwell, 1986). Also, defining the methods to collect this data was also of great importance (Yin, 2016). The data collected relates to perceptions and opinions of subjects about their interactions with the cooperatives, as well as historic records of the cooperative. The methods of collecting data were done through the use of semi-structured interviews and available documents on the cooperatives and institutions' records (Scott, Clayton, & Gibson, 1991; Yin, 2016).

4.3.1. Secondary Data

The analysis of existing records and historical data of the phenomena was crucial to provide information about data that was not easily observable (Yin, 2016). For this reason, secondary data was obtained through document collection. Records, reports, and other published materials provided by the cooperatives and governmental institutions were used in the analysis of the cooperatives. Additionally, statistical information provided by the Cooperative Audit Authority, AFCOOP, and the ministry of agriculture were used.

4.3.2. Design of the Interview Instrument

The interviews with the participants of the study were performed under a semi-structured interview process designed to explore different points of view and obtain more complete data. A guide for the semi-structured interviews was prepared ahead of time, but the specific questions were performed according to the dynamics of information presented during the interview (Yin, 2016). This allowed the researcher to tailor the degree of detail and broadness from each interview without losing the main objective (Yin, 2016). The interview guide used is presented in Appendix 2.

4.3.3. Primary data

To obtain a wide array of data, the interviews were divided among members of the two cooperatives and representatives of the overseeing institutions. To ensure the validity of the data, the selection of a sampling strategy was important. Yin (2016) proposes four different strategies for sampling: convenience sampling, where the participants are selected according their availability, snowball sampling, where the participants are selected with the input of the previous participant, random sampling, where the sample number is determined statistically from a known population, and purposive sampling, where the participants are selected with the aim to obtain the most relevant data. The method chosen for this study was purposive sampling focused on obtaining inputs from stakeholders in the different levels of the cooperative system. Interview selection began with members from different levels of the cooperative structure, and management staff were interviewed at each of the two cooperatives. For the institutions, interviews were obtained with the directors of each of the two governmental institutions overseeing the cooperatives, AFCOOP and DGPPFPPC, as well as the National Federation of Agricultural Cooperatives, FENCOA, as representation of the National Confederation of Cooperatives.

4.3.3.1. Selection of the Participants

The interviews were conducted between the first and the 26th of February of 2019. In total, 16 interviews were conducted during that period. These interviews were divided as follow: 7 members of El Ceibo, 6 members of CAICO, and 3 for the directors of institutions. Table 4 shows the respondents and their positions in their respective organisations.

Table 4. List of Respondents

No.	Position	Institution	Date of Interview
1	CEO	El Ceibo	9/02/2020
2	President of Surveillance Committee	El Ceibo	9/02/2020
3	Director of PIAF	El Ceibo	14/02/2020
4	Vice President of Management Committee	El Ceibo	14/02/2020
5	Collection Manager	El Ceibo	14/02/2020
6	Grass-root Member	El Ceibo	14/02/2020
7	President of Management Committee	El Ceibo	26/02/2020
8	Production Manager	CAICO	1/02/2020
9	Agro-Industrial Manager	CAICO	1/02/2020
10	Grass-root Member	CAICO	1/02/2020

11	President of Management Committee	CAICO	4/02/2020
12	CEO	CAICO	4/02/2020
13	Plant manager OKI SRL	CAICO	1/02/2020
14	Director	AFCOOP	11/02/2020
15	Director	FENCOA	7/02/2020
16	Director	DGPPPFP	19/02/2020

4.4. Data Analysis

Because of the existence of few standardised procedures for the analysis of case study data, this process was one of the most challenging parts of the research (Yin, 1989). For this reason techniques adapted from qualitative research were used to analyse the data obtained in response to the research and interview questions (Dey, 1993). A modified version of the model created by Dey (1993) was implemented, similar in nature to the one used by Gray (2001). This model separated the analysis of data into an iterative process of describing, classifying and connecting the data through several cycles before the analysis was completed (Dey, 1993; Gray, 2001).

The description process consisted of summarising the data obtained in the transcripts of the interviews and the notes of the field observation to provide a comprehensive account of the phenomenon of interest and its context (Dey, 1993; Patton, 1990). From this analysis concepts and relevant aspects of the data were highlighted (Dey, 1993; Gray, 2001). Additionally, since this was an iterative process, several versions of this process were performed and refined throughout the process of data analysis (Dey, 1993).

The classification process consisted of classifying the data into well-defined categories, sub categories and supra categories (Dey, 1993). This helped to develop a conceptual framework and facilitated the comprehension of the data and its comparison (Gray, 2001). This process was performed with the utilization of a software program called NVivo (Jackson & Bazeley, 2019) to classify the data. Since this process was also iterative, the structure of the categories observed was modified according to the findings at each iteration (Gray, 2001).

Finally, the process of connecting the data consisted of finding relationships between the categories found in the data (Dey, 1993). The nature of these relationship could be explanatory, that imply a causal relationship, or chronological, that depict the steps of a process (Dey, 1993). These findings helped the researcher to analyse how the variables interact and explain the process and relationship of the data (Dey, 1993). This was also an iterative process that was refined to better explain the nature

of the phenomenon (Dey, 1993; Gray, 2001). From this last step, the necessary insights and relationships were extracted for the completion of the objectives of the research (Gray, 2001).

4.5. Ethical Considerations

Given the ethical implications this study has on its participants and their environment, the Code of Ethical Conduct for Research, Teaching and Evaluations Involving Human Participants established by Massey University (2017) was employed to ensure the correct application of the research procedure. This code consists of two main considerations: the ethical principles involved in the research process and consideration about the access, use and sharing of data (Massey University, 2017).

These ethical principles contemplate considerations about autonomy of the participants, avoidance of harm, benefits from the research, justice and special relationships generated during the research process. Regarding the autonomy of the participants in the research, since this was an observational study, they were free to decide if they want their interactions to be recorded and/or observed without any kind of coercion. Regarding the avoidance of harm, this study focused mostly on recording interactions between the members of the cooperatives, and no harm was anticipated to come as a result of this process. Regarding the benefits generated by this research, they were related to spreading the knowledge of the factors of success of these cooperatives and incentivising other researchers to deepen the findings generated by it and the attainment of the requisites for the degree in Master of Agribusiness by the researcher. No economic profits are expected as a result of this research. Regarding the justice in the distribution of the benefits obtained by this result, both the community and the researcher will benefit in a non-monetary way from this research. And finally, regarding the special relationships generated by the interaction between the researcher and the participants, these relationships were honoured according to the ethics principles established by the Ethics Code of Massey University.

In terms of the access, use and sharing of data, considerations were taken regarding consent, privacy and confidentiality, Authorship and ownership of digital data, data governance and custodianship, disposal of data, and data sharing. Regarding the consent of the participants, they were informed that this was an ongoing process of informed consent and that they were free to remove their consent for their data at any point in the process, except when the results of the document have been already published. Regarding privacy and confidentiality, the participants were informed that no sensitive information was stored about them or divulged in a way that could trace them back by people external to the research process. Appendix 3 contains a copy of the information sheet that the participants signed. Also, the data was stored safely and encrypted to avoid unauthorised use of the information collected. Regarding authorship and ownership of digital data, no raw data was published or shared

without passing through the necessary steps to ensure its safe publication. The authorship and ownership of the information obtained as a result of the research process remains with the author. Regarding data governance and custodianship, the duties related to an adequate process of archiving and disposal of data remains the responsibility of the author of the research document and performed according to the procedures established by the university. Regarding the disposal of data, this process will be performed after a set amount of time in compliance with the norms and procedures of Massey University.

CHAPTER 5. Results Chapter

This chapter explains the findings of the study on the Cooperative Central "El Ceibo" and the Integral Agricultural Cooperative of the Okinawa Colonies, or CAICO. The analysis of each cooperative will be divided into three parts. The first part will provide background information on the cooperative. The next section details the main factors of success identified in the cooperative. Finally, the last section will analyse the challenges that the cooperatives face.

5.1. El Ceibo

El Ceibo is a second-level agricultural cooperative based in the northern region of La Paz called Alto Beni. It was founded in 1977 as a result of the colonisation process that occurred in the region. This central cooperative is comprised of 47 grassroot cooperatives, also known as first-level cooperatives, that represent close to 1200 families mostly living in the area, but with some other first-level cooperatives in the neighbouring regions of Beni and Cochabamba. These grassroot cooperatives have an independent governance structure while having decision power over the central cooperative, as established by the cooperative legislation of the country. More details about this structure can be found in the country context chapter

The central cooperative's main activity is the processing and commercialisation of its member's cacao production. The central cooperative developed vertical integration efforts that have allowed them to become the largest cacao producing organisation in the country accounting for close to 20% of the country's cacao production (Espinoza, Olivera, & Ledezma, 2014). This vertical integration was achieved through the implementation of an industrial plant with a capacity of processing 2000 kg of raw cacao per day. This plant, located in the city of El Alto, neighbour city to La Paz, allows them to produce a wide array of finished and semi-processed products, such as cocoa powder, cocoa butter, and finished chocolate, for domestic and international markets.

Additionally, the cooperative established a 5-year strategic plan in 2017 with a set of objectives aimed at increasing their production and market share. This plan proposes the construction of a new processing plant that would double the current processing capacity of the cooperative, as well as increasing the production of its members. Appendix 4 has a detailed description of this plan, the structure, and activities of the cooperative.

5.2. Factors that Determine the Success of the Cooperative

El Ceibo is one of Bolivia's biggest and most successful agricultural cooperatives. The success of the cooperative can be attributed to a series of factors that come from its structure. These factors are heavily interrelated and their contribution to the success of the cooperative must be analysed in

relation to each other. However, six factors were identified as the most relevant to the success of El Ceibo and they are the following: leadership and participation, strategic vision of the cooperative, benefits to becoming a member, effective governance structure, strong sense of ownership, and a common cultural background among the members.

5.2.1. Leadership Development

The development of good leaders among the first-level cooperatives affiliated to El Ceibo was fundamental for achieving the cooperative's objectives. Due to the farmer community-based structure of the first-level cooperatives, the influence of leaders is considerable to ensure the wide-spread knowledge of the cooperative's objectives and the development of member commitment to the cooperative. Proactive leaders in the cooperatives helped to improve the communication between the cooperative and the members. Additionally, leaders had a considerable influence in the dissemination of the scope and the characteristics of the policies implemented by the cooperative and the objectives. They facilitated the understanding of these elements by the members and consequently increased active participation in the cooperative. This also had a close relationship with the commitment of members to the cooperative and participation was also the difference between the acceptance or rejection of the changes implemented in the cooperative.

> *As I told you, the biggest factor for success in El Ceibo, even more than the productive part, is the social aspect. El Ceibo managed to get a good member base. I will give you some rough data, 5% of those producers are innovative people, 10% are leaders in their communities, sometimes they may not be the most productive members, but they are very effective leaders. There is another 10% that is very interested in financial management, they do not have the best yields either, but they are very interested in finances. And the 75% remaining are the grass-root members. The management of El Ceibo has its strengths in its social and administrative management. (Respondent 3, 2020)*

The central cooperative's education department played the main role in the identification and development of younger leaders with a positive impact on the generational changes of the cooperative. By putting more emphasis on the development of young leaders, the cooperative also generated the drivers for change and the renewal of the member base of the cooperative. These leadership trainings were supplemented with incentives that improved access to formal education for members and their families and were fundamental for this leadership development process. They have not only benefited the management staff of the central cooperative, but also improved the management of the first-level cooperatives by providing people with the necessary skills to maintain

their independence from the central cooperative. These programmes were the main hub for the formation of leaders in the cooperative and helped reduce follow-up problems in the cooperative.

> *Every year, the education department, performs a diagnosis on the weaknesses that the cooperative has in order to tackle them. And for each cooperative, there are all kinds of people, good and bad, that want to help or not, so the people that wants to help are the ones that participate. (Respondent 5, 2020)*

An effective development of leaders among the cooperative also increased the participation of members in the cooperative's structure. These high levels of member participation in the central cooperative and the first level cooperatives improved the effectiveness of the control mechanisms. Even though the control mechanisms, in the form of the different committees and the member assembly, were well-defined with an active decision-making role in the central cooperative and the first-level cooperatives, these mechanisms would be ineffective without the active participation from the member base. By making the participation in the assemblies mandatory and getting leaders to incentivise a more active role, the cooperative has been able to maintain strong leadership over time.

5.2.2. Strategic Management

A crucial factor that determined the success of El Ceibo was the existence of a clear vision and a strategic plan for the cooperative. Being one of the few agricultural cooperatives to have established a strategic framework to guide their long-term objectives has allowed El Ceibo to design their operational policies more efficiently. It has allowed them to establish objectives and metrics to control the levels of completion. Additionally, the internal analysis performed to generate this strategic plan enabled them to identify the key factors that drive the development of the cooperative and establish the areas that require further attention. This generated a better allocation of resources and the design of investment plans focused on achieving the objectives of the cooperative.

> *We base ourselves in our 5-year plan. So, every area has a defined role and analyses what we have accomplished during the year and forecasts budget, forecasts indicators, and establishes activities that aim towards the 5-year plan. (Respondent 1, 2020)*

El Ceibo's definition of strategic objectives are essential to the cooperative's long-term development. By establishing their strategic objectives and structuring them in a hierarchical model, the cooperative was able to focus their efforts in a better manner to achieve the overall goal of increasing the returns for members. The high levels of participation and inputs from members during the elaboration of the strategic objectives also helped with the development of objectives that reflected the interests of the

member base. This reduced the costs related to decision problems because it reduced the gaps between members and the management of the cooperative.

> *This process was discussed among the grass-root cooperatives. Even though we may not be 100% informed on the whole plan, our input was considered in the process. We will see how the agroindustrial department will adapt to it. (Respondent 6, 2020)*

The definition of performance indicators for the completion of the strategic objectives also played an important role in the successful application of the strategic plan. Establishing defined metrics to evaluate the performance of the cooperative, allowed them to make adjustments in the operational planning to ensure that the goals set were met. This diminished the ambiguity in the evaluation of management performance and allowed a better application of member-control mechanisms.

> *We did an evaluation before the design of the AOP to check how our progress is going according to the indicators stablished in the strategic plan. We are accomplishing the ones that were established, although some of them need internal adjustments to meet the goals. (Respondent 1, 2020)*

5.2.3. Economic and Non-Economic Incentives

The benefits that the members of El Ceibo and the first level received as a result of the cooperative's activities were important to its success. These benefits incentivised members to remain a part of the local cooperatives as well as the central and attract potential new members to them both. This was important to ensure the growth of El Ceibo's membership and the conditions to meet its strategic objectives. These benefits were both economic and non-economic in nature.

The economic incentives for members that El Ceibo and the first-level cooperatives generate were important for the success of the cooperative and its long-term growth. By generating a profitable alternative for their members in terms of prices and profit distribution, the cooperative has managed to remain the best option for farmers in the region. Additionally, the cooperative model used in El Ceibo has adapted to the changes in the conditions of farmers and the region since its establishment to the present. This has allowed the central cooperative and its first-level cooperatives to develop a flexible structure that has adapted to the changes in domestic and international markets.

> *There are benefits that we still receive now, like the distribution of profits. That is what makes them one of the best cooperatives in Bolivia. We went to visit other cooperatives in Santa Cruz and Cochabamba and those cooperatives do not distribute profits among their members, they just re-invest in the cooperative. (Respondent 2, 2020)*

Non-economic incentives also played an important role in improving the productivity and the living conditions for members. The technical support services that El Ceibo provided has resulted in much higher yields and operational efficiency than other farmers in the region. Improving farm management for the members drove the constant improvement of their production and allowed them to be competitive in the industry. These improvements would not be economically feasible for individual farmers because of the costs of operation. This was the main factor that led to El Ceibo's constant growth in throughput and allowed their operation expansion. Also, member welfare initiatives have ensured that farmers recover quicker from hardship and shocks and their commitment to the cooperative. Improving farm management for the members drove the constant improvement of their production and allowed them to be competitive in the industry.

> *There have been a lot of benefits (through the central), El Ceibo has implemented scholarships, it has guaranteed Good prices for cacao as raw material, and, following the national policies, has contributed to a higher participation by women. Also, according to the cooperative principles, there must be gender equality. We implemented these policies even before the government did. (Respondent 7, 2020)*

5.2.4. Member Control

The cooperative's well-defined governance structure and member control mechanisms were important factors that contributed to its success. The clear definition of the roles and tenures of the governance positions across the first-level cooperatives and the central cooperative increased the democratic participation of the members and reduced the costs related to portfolio and monitoring problems. In addition, the governance structure was also positively influenced by the high levels of participation of the members by providing information that increased its efficacy. The clear definition of the member control mechanisms through a well-established governance structure also had a positive influence on the formal definition of ownership rights of the members of the first-level cooperatives over the central cooperative.

> *The formal communication is done through the assembly, the seminars, workshops, and the written information. The use of minutes is also very common among cooperatives. We have very well-structured channels through the department of education. So, there is constant communication between the central cooperative and the grassroot cooperatives. (Respondent 6, 2020)*

Rotation policies that set a certain tenure on staff positions allowed the reduction of influence costs and generated more democratic participation from the members. By restricting the maximum time a

member can hold a position to two 5-year terms, the cooperative avoids the risk of the formation of influence groups that could exercise extraordinary powers of control over the cooperative. The active democratic participation of members in the decisions facing the cooperative has itself built capacity among the farmers and added to a large pool of members qualified to occupy leadership positions. Additionally, the fact that members must return to their agricultural activities after finishing their tenure diminished the risk of influence groups even further.

> *One of the principles (of the cooperative) is the democratic participation of the members. In previous years, the term for each tenure was three years for the strategic, management and operative positions. However, with the new statutes implemented in 2019, this term was expanded to 5 years to avoid more frequent rotation. But, the objective of this limit is to generate more opportunities for members to participate and get formation for these kinds of positions. (Respondent 1, 2020)*

Additionally, key elements of the cooperative's governance structure have been defined by the current cooperative legislation. The main structure of management at different levels in the cooperatives is defined in the legislation as well as the tenures and the voting rights. This contributed to the establishment of new first-level cooperatives and the development of existing ones. Additionally, the cooperative has implemented a guiding process for members of new cooperatives and members new to a position in the governance structure that helped with the transition period. This incentivised continuity in the work of the cooperatives and diminished the adaptation costs for new members.

> *Yes, the central cooperative gave us a guiding process like the one I must do to the person that comes after me to this position. I must go through the information necessary for at least 2 months. Without it, people do not know what to do. (…) During the guiding process we had to go around many places learning the roles. (Respondent 2, 2020)*

5.2.5. Strong Sense of Ownership

Another driver for the success of the cooperative was a deep sense of ownership of the cooperative by its members. This sense of ownership generated a reduction in agency costs because it encouraged members to assume a more active role over the management process. The members of El Ceibo have a strong feeling of belonging to the cooperative. This in turn generated a better alignment with the objectives of the cooperative and the objectives of the members. By accepting and embracing the cooperative's objectives as their own, the members created a deeper commitment to the success of the cooperative. Additionally, the sense of ownership also increased levels of participation in formal

and informal governance mechanisms as explained before. With the internalisation of their role as owners of the cooperative, the members were more willing to exercise their control rights to ensure that their investment is being appropriately managed. This also created greater participation in the planning processes and policy design, making them more relevant to the actual work and processes of the members who would have to implement them.

> *The advantage is that we feel like workers and owners of the cooperative and we do the work without other interests in mind. Here in Sapecho we have an entry time but not an exit time. In the morning, we get in at 8 am and you can leave at noon or 1 pm without problems. The same in the afternoon, we start at 2 pm, according to our biometric system, and leave at 6 pm or 8 pm according to how much work we have to do. And the returns are not only for me, but for everyone. (Respondent 5, 2020)*

This sense of ownership of the cooperative also increased the involvement of members in the activities of the cooperative. The active role of members in the cooperative was perceived as a service that members must provide to the cooperative in return of the benefits they receive. The perception of work within the cooperative as a service was a profound cultural factor behind it which made it easier to adopt by members of the cooperative. The members interact with the cooperative as a two-way relationship, where the cooperative's obligations are to generate better returns for the members and the members' obligation is to provide labour to help achieve the objectives. Based on this perception, the members that are part of the management structure of El Ceibo accept a smaller payment than the average of the industry. This generated a success factor for El Ceibo because the commitment of its members towards the cooperative generated a higher identification with its objectives.

> *For example, when I was working for FIE bank, I used to earn 8,000 Bs (1,160 USD) per month and here I make 6,000 bs (870 USD). But the advantage is that I am working for myself and another thousand families, not for 2 or 3 owners of the bank. (Respondent 5, 2020)*

5.2.6. Common Cultural Background

The common cultural background shared by the members of the cooperative also determined the success in the governance dynamics of the cooperative. The influence of the community dynamics of the peasant communities in the highlands, such as the Ayni, and the social issues created in the communities after the colonisation process were both factors in the implementation of the cooperative principles in the different communities. The rotative nature of positions, in the board and the management staff, and the conception of work in the cooperative as a service that members must provide for the benefits they receive were informed by the cultural values in these communities. They

also diminished the possibility of generating influence groups in the cooperative. The perception that these common cultural origins had a direct effect on the way the cooperative was developed was very present in the members' mindset. This generated the cohesion among the member base and its identification with the cooperative's objectives.

> *We tend to look after the people from the countryside and with fewer resources. Most of El Ceibo members are from middle to lower class and have come from very poor backgrounds. Thanks to El Ceibo we managed to improve as a group. (…) Our strength resides in our unity because when we act together, we can accomplish many objectives. (Respondent 7, 2020)*

The common cultural background of the members of El Ceibo did not only affect the willingness to cooperate among members, it also determined the community focus of the cooperative. The profound connection of the first-level cooperatives and the communities that they work in has determined the scope of some of the development policies of the cooperative. The unrestricted access to training programmes and the results of the research and development initiatives within the cooperative improved the perception of the cooperative by non-members and increased the likelihood of new members joining and first-level cooperatives being formed. The duty that members of El Ceibo feel towards the development of their communities facilitated the implementation of these policies and reduced the costs for new members to join the cooperative.

> *Our statutes say that we must collaborate and be part of the communities. (…) We try to incentivise the other member of the communities to one day become part of the cooperatives. Also, our activities are open to everyone and are not restricted to members of the cooperative. (...) Thanks to that, several new cooperatives are being formed. For example, when I started working as a technician in 2010, there were 40 cooperatives members of El Ceibo. Nowadays we are 47 so 7 new cooperatives were formed in that time. (Respondent 7, 2020)*

5.3. Challenges to the Success of the Cooperative

The cooperative structure of El Ceibo and the nature of its activities generated a series of challenges to its success. These challenges were related to two main problems: investment related problems and decision related problems. These challenges were created by a series of internal and external factors that will be analysed in this section

5.3.1. Investment-Related Problems

The challenges created by investment-related problems are a result of an unclear definition of ownership rights and a lack of valuation methods for those rights. By being subject to the legal environment of cooperatives, the formal ownership rights In El Ceibo were defined through the

legislation. This legislation defines the structure of the membership, voting rights, and the structure of formal control mechanisms. However, the cooperative determines the way the residual claims are assigned. Additionally, the lack of well-defined trading markets for membership rights due to the nature of these rights, made it difficult to apply valuation mechanisms for these rights.

The cooperative's structure in terms of the development of infrastructure, research and development, and pricing policies generated common property problems for members. In terms of internal common property problems, the lack of trading mechanisms for members restricted the access to market information on the value of their shares in the cooperative. This was particularly relevant in El Ceibo given the continuous investment that the first level cooperatives and the central were making to improve their operating conditions. This created a challenge for the cooperatives in terms of reflecting those improvements in the costs for joining the member base. However, the existence of independent policies for membership costs for each first level cooperative based on their own levels of infrastructure helped to diminish these problems.

El Ceibo has created external common property problems in the region, through its efforts in research and development of cacao, and its policies on the pricing of raw materials. By making the access to the results of the products of the technical support department available for non-members at the same cost as for members, the cooperative increased the availability of better yielding varieties for farmers in the area. However, by providing higher prices for its members' throughput, the cooperative also increased the average prices for raw materials in the region. The cooperative deliberately allows these asymmetries in the market to exist as a way of attracting new members and to facilitate their transition to the cooperative's quality standards.

Because of the large member base of the cooperative, El Ceibo faced a series of challenges with the heterogeneity of preferences among members. These heterogeneous preferences come into play in the definition of markets for the throughput and strategic objectives of the cooperative. Additionally, these differences in preferences and attitude towards risk affect the way the cooperative evaluates expansion projects, creating portfolio and horizon problems. The lack of trading mechanisms within formal ownership rights increased the presence of these problems in the cooperative structure. However, the cooperative's focus on democratic participation as part of the control mechanisms helps to reduce these risks.

5.3.2. Decision Related Problems

The presence of agency costs between the member base of the cooperatives and the management staff created decision related problems for El Ceibo. The problems that resulted from divergences

between the interests of the agents and principals are a main concern for the members of El Ceibo. This was reflected in the policies the cooperative implemented to reduce these risks.

The cooperative's efforts in ensuring that most of its management staff was made of members of the cooperative was focused on minimising monitoring and follow-up problems. The members have internalised the idea that the best way to reduce agency costs is by taking care of the management process. Additionally, the cooperative's focus on incentivising member participation in the planning process and the formal control mechanisms was also focused towards the minimisation of monitoring costs. The policies regarding rotation of positions and limited tenures also helped to diminish these risks. This was focused on minimising the risk of influence groups to form within the cooperative.

5.4. CAICO

The Integral Agricultural Cooperative of the Okinawa Colonies, or CAICO by its Spanish initials, is one of the largest agricultural cooperatives of the region of Santa Cruz. The cooperative was founded in 1971 with the union of three agricultural cooperatives that were established in the three Japanese colonies of Okinawa. These colonies were established by Japanese immigrants and they are located almost 90 km away from Santa Cruz de la Sierra. The cooperative has two main locations: the offices in Okinawa located in the agroindustry complex of the cooperative, and the administrative offices in the city of Santa Cruz.

The cooperative is made of 124 members, distributed among the three colonies, and with an extension of 1,216 Km^2. The members are descendants of the first members of the cooperative. The cooperative's main activity is related to the production of crops like soya, wheat, rice, corn, and sorghum, as well as meat and dairy cattle. As part of their agro-industrial department, the cooperative also developed a processing centre for their grain production and a mill for wheat processing. This agro-industrial complex contains a processing plant for Soya, a seed processing plant, and silos for seed storage. Additionally, the mill processing centre has the capacity of producing flour and different kinds of pasta. These two departments were originally part of the cooperative. However, after 2013 and the application of the new cooperative legislation, the cooperative decided to separate these departments into independent companies. Since then, the management and assets of these departments work under two independent legal denominations. Appendix 5 contains a detailed explanation of the cooperative structure and its activities.

5.5. Factors that Determine the Success of the Cooperative

CAICO's long lasting history and size make it one of the largest cooperatives in the country. The success of the cooperative can be attributed to the structure of the cooperative and its relationship with its

members. These factors are heavily interrelated among themselves and must be analysed as a whole. However, for ease of analysis, five factors that determine the success of the cooperative have been identified as the most relevant. The factors identified in CAICO are a common cultural background among the members, a strong sense of ownership, the training programmes for members, the benefits that members receive, and a well-defined governance structure.

5.5.1. Common Cultural Background

The common cultural background that the members of CAICO shared was crucial for the success of the cooperative. Given that they all come from a common Japanese root, and that the original colonisers came from a cooperative background, the members have a greater predisposition towards cooperation. This enabled the creation of a large cooperative and the development of commonly owned infrastructure. By having a member base with a deeply ingrained favourable attitude towards a cooperative structure, CAICO reduced the common-property costs and portfolio problems. The internalisation of the concepts of cooperative work by the members generated by this, facilitated the understanding of the role of CAICO in the economic and social development of its members and the community. It also generated a higher identification with the objectives of the cooperative and increased the horizon of permanence in the cooperative.

> *My parents are Japanese immigrants. They came with that group purpose. Before forming the Okinawa Colonies Comprehensive Agricultural Cooperative (CAICO for its initials in Spanish) in 1971, they had individual co-operatives called Okinawa 1, Okinawa 2 and Okinawa 3. My father was a "cooperativist" since he arrived as an immigrant, always working in group. (…) They were all small producers and had to fill the trucks to transport the products. Also, because of the distance, it took a week to go and sell. That's why the cooperative was formed. (Respondent 11, 2020)*

The common cultural background shared by the members, in addition to the generational structure existent in the member base and the dynamic relationship with the three colonies established in Okinawa determined a series of common characteristics that were important to the cohesiveness of the structure of the cooperative. Additionally, the similarities among the members in terms of economic conditions and access to education have also created a relatively favourable environment for the implementation of the member control mechanisms in the cooperative. This is particularly important for a cooperative that has a high level of heterogeneity in terms of throughput. The common characteristics and backgrounds of the member base helped with the efficiency of the member-control mechanisms of the cooperative.

I consider the cooperative is successful if we comply with everything that I mentioned before. If the norms and social goods are respected. If there is honesty among members. And if there is discipline and hard work. In Japan, the schedules are respected because if rice farmers do not sow the day they should, then they do not eat. (Respondent 12, 2020)

5.5.2. Strong Sense of Ownership

The sense of ownership that the members of CAICO had towards the cooperative was another important factor of success. This was evident in the sense that members knew that the cooperative was a part of their history and the legacy of their parents. This sense of ownership increased their incentives to remain as members of the cooperative. Because of this, the members perceived their role in the governance of the cooperative as a duty and as a responsibility for future generations of members. The concept of ownership and the attachment that it generated in the member base decreased the costs related to horizon problems by increasing the investment time scope of members. The existence of this sense of ownership was also reflected in the active role that members and their families had in the management of the cooperative and the organisations related to it. This has a direct effect on the minimisation of agency costs that the cooperative has to dedicate to its operations.

I think I will continue with the cooperative. (…) Because entering CAICO and working in Okinawa is part of our culture, and if we decided to leave it, we would lose that with some Japanese customs. (Respondent 10, 2020)

I think it's a duty. We all have to go through a board position. I don't want to become president, but perhaps I would like to become a secretary, a member of the supervisory committee or something similar within the board of directors of the cooperative. (Respondent 10, 2020)

The effects of the modification of the ownership structure after the separation of the value addition departments of the cooperative also showed the sense of ownership that members had over the cooperative. Despite the formal separation of the cooperative into three independent organisations, the perception of ownership did not change among the member base. There were two factors that demonstrated this phenomenon. The first factor was the fact that the members of the cooperative were the shareholders of the companies. Even though not all members opted to purchase shares, the ownership of the companies has remained entirely among the members. This showed that there was not a dilution of formal ownership rights to external investors. The other factor was the perception of ownership among the member base. The members of the cooperative did not perceive the creation of the companies as a separation of the assets of the cooperative. Conversely, they perceived it as a preventative measure to protect their investment from the uncertainty that the application of the

new legislation brought. Furthermore, the members perceived that this change in the legal structure brought a more efficient structure to the cooperative. This was because the new structure allowed the implementation of better metrics to measure the profitability of each department by the development of independent financial information.

> *The reason behind the division was the introduction of the new cooperative law. The cooperative has to be dynamic to work. However, constantly consulting with the members generates bureaucracy. That is why the corporate model is more dynamic. The industrial part of the operation is managed by the corporation. The purchase of inputs and the sale of goods has to be agreed with the member base. That is why this is done with 2 months in advance. Additionally, the overseeing process done by AFCOOP is a slow process. After the separation of the cooperative, the financial information is more easily observed, leading to a better decision-making process. (Respondent 10, 2020)*

5.5.3. Training Programmes

Another important factor of success was the training that CAICO provided for its members, which increased the effectiveness of the management process by developing the member base. By increasing the knowledge of members of the industry and other cooperatives, the cooperative complements the formal training of their members and generates a more efficient management staff. This increased the efficiency in the decision-making process. Additionally, the training programmes provided by the cooperative also reduced the monitoring costs by increasing the efficacy of the control mechanisms. The members that opted for these programmes tended to have a greater participation in the governance structure of the cooperative and in time would take charge of it. The existence of these training programmes enabled the generational change in the management of the cooperative.

> *In the first two years of membership one cannot be part of the board of directors. However, one can be a commissioner, either in the agricultural commission or in the farming commission. In order to join the board of directors, one has to go through a six- or seven-year process, during which time they will prepare themselves. It normally takes about 10 years to gather the necessary experience. This process is not mandatory and there are some who are not interested. Those who are interested are those who start by looking to be part of the committees and start their career as soon as possible. (Respondent 11, 2020)*

The importance of having a management staff that has access to formal training was very important to ensure the success of CAICO. A management staff that had these skills increased the efficiency of the cooperative. By incentivising young members of the community to study a degree the cooperative

ensured the existence of a large pool of potential staff members to work in the cooperative. The fact that all the members of the management staff had undergraduate degrees in fields related to agriculture demonstrated the current capacity of the cooperative's staff. Also, the proximity of the colonies to the city of Santa Cruz and the universities increased this access even further. Additionally, the cooperative incentivised its members and staff to visit other cooperatives, nationally and internationally, as well as other players in the industry. This increased the practical and theoretical knowledge of the staff members, thus increasing the efficiency of the management process.

> *The city is much closer than when our parents started the co-operative, 65 years ago. I remember that it took one whole day to come to the city, and the road was awful. You would stay in the city one night and return to the colony. Now it takes an hour and a half to get to the city. I go to work and come back easily. Speaking of education, many have the possibility of becoming professionals. In our time, we are 10% of young people who are professionals. Now 70% are professionals, if I'm not mistaken. There have been tremendous changes (Respondent 11, 2020)*

The cooperative established the need for members that wanted to apply for positions on the board. These requisites and the need to develop practical experience within the cooperative and the institutions related to it was important to guarantee that the members that applied for these positions were correctly prepared for them. This was particularly important given that these positions require people with good decision-making skills and a deep knowledge of the structure of the cooperative. This policy also reduced the costs related to monitoring and decision problems.

5.5.4. Member Benefits

Another of the most important elements that contributed to the success of the cooperative was its ability to provide benefits to its members. By generating these benefits, the cooperative remained a profitable option for its members and ensured their permanence in the cooperative. The incentives generated by these benefits increased the commitment that the members had towards the cooperative.

One of the main benefits of becoming a member of the cooperative was in the structure that CAICO has managed to establish for the commercialisation and transformation of the members' throughput. This was reflected in the fact that one of the main roles of the cooperative was to constantly find the most profitable options for the commercialisation of the throughput. By having a staff dedicated to this, the cooperative relieved the responsibility of members to negotiate and allow them to focus on producing. The existence of economies of scale allowed the cooperative to have stronger negotiating

power. This was particularly important in an industry where intermediaries had a considerable influence in the price definition.

> *The main tasks of the cooperative management are related to coordinating the work with the members. We schedule the meetings with the different commissions and establish the agenda for the assemblies. We also coordinate the work with institutions like ANAPO (National Oilseed producers association). They review and authorise credits for the members. We coordinate the bulk purchases of agrochemicals, coordination of money transfers, input distribution logistics. Additionally, the cooperative constantly looks for better markets for each year's production. all of these activities are done in coordination with the board of the cooperative. (Respondent 10, 2020)*

The cooperative also provided infrastructure for the storage and processing of the members' throughput. The common ownership of this infrastructure generated access to production and markets that would not be available to small and medium sized farmers otherwise. Additionally, the processing capabilities provided by the cooperative and its associated companies allowed the members to access higher yielding markets than they would with raw materials. The storage capabilities also allowed the cooperative to have a better negotiating window to look for better prices for the throughput.

> *Yes, when all this started, the cooperative had a couple of sheds, a supplier, and a few offices. Now it is one of the only agricultural cooperatives in Bolivia. There are hardly any other cooperatives this size, as you must have noticed. It is a success story in Bolivia. (Respondent 9, 2020)*

The credits that the cooperative provided to its members was a very relevant incentive for members to remain members of the cooperative. These kinds of credits are usually less accessible for members or have a higher interest rate. This is because agriculture is usually considered a risky investment and interest rates in the financial markets are high. The availability of these credits represented a considerable advantage for members because it allowed them to have better liquidity in their operations. This enabled them to maintain high levels of production despite the market conditions. Additionally, the possibility of backing these credits with the support of two members of the cooperative enabled the members that did not have enough assets for the mortgage collateral to access these credits.

5.5.5. Member Control

CAICO had a well-defined governance structure that contributed greatly to the success of the cooperative. The clear definition of roles within the governance structure of the cooperative allowed a more efficient implementation of the member control mechanisms throughout the cooperative. CAICO's focus on incentivising the democratic participation of its members across the governance structure helped to reduce monitoring problems. The formal control mechanisms were also complemented by the use of the different communication channels that the cooperative implemented. This allowed the members to provide feedback on the implementation of policies across the cooperative and improve the efficacy of the governance of the cooperative.

> *It is important that all members attend because it is our channel to inform members of the different decisions. If they don't attend, many times they don't know about certain changes and end up complaining. Now that members attend the various meetings, assemblies and talks, there are few complaints. (Respondent 11, 2020)*

The effect that the implementation of the new legislation for cooperatives had on CAICO was considerable. The definition of the guidelines for the governance bodies established by the legislation determined a more homogeneous structure among the cooperative sector. However, the uncertainty that the conditions of this new legislation brought to CAICO led to the separation of the processing and storage departments of the cooperative into two independent companies.

The formal separation of the cooperative into three independent organisations changed the formal governance structure of the cooperative regarding the newly independent sections. However, the perception of the distribution of formal and residual ownership rights by the members of the cooperative remained relatively unchanged. There were two factors that demonstrated this phenomenon. The first factor was the fact that the members of the cooperative were the shareholders of the companies. Even though not all members opted for purchasing shares, the ownership of the companies has remained entirely among the members. This showed that there was not a dilution of formal ownership rights to external investors. The other factor was the perception of ownership among the member base. The members of the cooperative did not perceive the creation of the companies as a separation of the assets of the cooperative. Conversely, they perceived it as a preventive measure to protect their investment from the uncertainty that the application of the new legislation brought. Furthermore, the members perceived that this change in the legal structure brought a more efficient structure to the cooperative. This was because the new structure allowed the implementation of better metrics to measure the profitability of each department by the development of independent financial information.

Decision-making here (at the agroindustry company) is done at the board level, and there is no consultation with members. For example, the opening of our services was an internal decision at the board level. That helps a lot for the good maintenance of the organization. (Respondent 9, 2020)

5.6. Challenges to the Success of the Cooperative

CAICO's structure and the nature of its activities created a series of challenges for its success. These challenges were related to two main problems: investment related problems and decision related problems. These challenges were created by a series of internal and external factors that will be analysed in this section

5.6.1. Investment-Related Problems

The definition of ownership rights in the cooperative has created a series of investment related problems. Despite the formal ownership structure being defined by the current cooperative legislation applicable in Bolivia, the definition of residual claims was defined by the cooperative. The division of the cooperative and the creation of the two companies also affected these definitions. Additionally, the lack of trading mechanisms for membership rights, in the cooperative and the other companies, did not contribute to reducing these problems.

The cooperative's structure regarding infrastructure and research on agricultural inputs created common property problems for the cooperative. The existence of infrastructure for processing and storage created internal free-rider problems. The separation of the cooperative's processing infrastructure into the two companies tackled this issue. By separating the processing facilities and giving members the choice to purchase the shares according to their portfolio preferences, as well as introducing a corporate structure to the shares, the cooperative distributed the formal ownership of these facilities more efficiently. However, despite this new structure, the ownership of the companies is still closed to members of the cooperatives and are not traded in financial markets.

The cooperative's policies regarding making the results of their research and development initiatives available to non-members has also created external free-rider problems. The experimental farms managed by CETABOL were not only reserved for members of the cooperative because of the policies oriented around making CETABOL a self-sufficient organisation. The external free rider effect created by this policy was also considered by the cooperative as part of their contribution to the development of the region.

The generational structure of the cooperative and the distribution of assets to the companies created in 2013 generated horizon and portfolio problems in the cooperative. Older members of the

cooperative have a low propensity to risk and a shorter horizon on their investment portfolio. This was reflected in the fact that no new expansion or infrastructure development projects have been approved by the assembly over the last few years. This has created challenges for the approach that the cooperative has towards the development of new infrastructure.

5.6.2. Decision Related Problems

The cooperative's management structure generated a series of agency costs between the members and the management staff of the cooperative and the companies. Because the staff in charge of managing the cooperative and the other companies were not members of the cooperative, even though they were directly related to it, with a different set of interests to the members. This created discrepancies in the objectives of the cooperative and increased the monitoring costs for the members and created follow up problems. The cooperative members minimised these risks by employing people with a close relationship to the member base and the colonies, as well as a good implementation of the governance structures. These helped with the identification that the agents felt with the objectives of the cooperative.

Certain characteristics of the member base created by its cultural background were also observed to generate influence costs on the decision-making process of the cooperative. Within the cooperative, older members tended to have a greater influence in the decisions made by the member assembly. The attitude towards risk of older members could affect the relationship between the members and the management staff.

The lack of a strategic framework for the definition of long-term objectives for the cooperative also created decision related problems for the cooperative. Without a clear and well-established set of objectives, there was difficulty in monitoring the long-term performance of the cooperative. This created ambiguity in the management process and generated decision problems within the cooperative.

CHAPTER 6. Discussion

This chapter will focus on the discussion of the similarities and differences that each cooperative had in their approach to the factors of success and challenges they face and contrast them with the existing literature on the subject. The first part of the chapter will analyse each cooperative under the framework proposed by Cook (2018) to determine the life cycle stage of each cooperative in the life cycle framework. The second part of this chapter will focus on discussing the factors of success of both cooperatives and compare them with the current literature on the subject. For this comparison, seven factors of success were established for the cooperatives. These factors were leadership development and training, economic incentives for members, strategic management, services to members, member control mechanisms, a strong sense of ownership, and a common cultural background. The third part of this chapter will focus on analysing the challenges that both cooperatives face. These challenges will be divided into two categories: internal, and external challenges.

6.1. Life Cycle Framework Analysis

It is important to analyse the specific characteristics and challenges that each cooperative faced in their own context. The framework formulated by Cook (2018) provides an useful mechanism to analyse those characteristics based on the specific characteristics of each stage of the life cycle. These stages are justification, organisational design, growth-glory-heterogeneity, recognition and introspection, and choice.

Due to the constant growth and expansion of the operations of El Ceibo, it can be observed that the cooperative is currently going through the third stage in this framework: growth – glory – heterogeneity. This is because the cooperative continues to generate positive and growing returns for its members. Additionally, the member base is constantly increasing, due to the efforts to attract new farmers and expand to different regions. The current expansion projects that the cooperative is undertaking and the constant efforts towards expanding beyond their current geographical scope show that the cooperative has not reached its growth peak. As established by previous studies, this growth increases the heterogeneity in the member base, which creates non-structural frictions that can be solved by changes in policy (Apparao et al., 2019; Cook, 2018). The cooperative's problem-solving process based on democratic participation was shown to be capable of dealing with the disagreements effectively so far. However, for El Ceibo, the completion of the expansion project and the possible saturation of the domestic market generated by the increase in production by the cooperative could generate structural challenges that will move them to the next stage in the life cycle.

CAICO has shown considerable growth in the past and has gone through some restructuring. However, since the division of the cooperative, this growth has subsided, and the presence of structural problems suggest that the cooperative is going through the fourth stage in the life cycle: Recognition and Introspection. After the independence of the processing departments into two companies, the role of the cooperative has become less clear. Now that the role of value addition and processing is not dependent on the cooperative, the economic incentives to members are now based on the economies of scale generated by the purchase of inputs and the negotiation of princes. Also, the fact that the cooperative is not obliged to send its production to the processing companies has also increased the ambiguity in the role of the cooperative. This has led to a momentary halt in the implementation of expansion projects in the cooperative. The literature suggest that this could lead to a more complex distribution of residual rights that can affect the long-term health of the cooperative (Borgen, 2004; Nilsson, 2001). However, the members are confident that the cooperative will continue to exist in the future, but changes need to be made to ensure it. Yet, the lack of expansion projects and a formal strategic framework for long-term objectives are evidence of a deceleration in the growth of the cooperative. If the threats generated by the loss of profitability in its commercial activities are not addressed, the cooperative will soon face the next stage of the framework: choice.

6.2. Factors of Success for the Cooperatives

This section of the discussion will be focused on analysing and contrasting the factors of success of both cooperatives while comparing them with the existing research in the literature. This section will analyse each of the seven factors identified that contribute to the success of the cooperatives. Table 5 shows the relative importance that each factor of success has for each cooperative.

Table 5. Comparison of Importance Factors of Success Among the Cooperatives

Factors of Success	El Ceibo	CAICO
Training and Leadership Development	◆ ◆ ◆	◆ ◆ ◆
Economic Incentives	◆ ◆ ◆	◆ ◆
Strategic Management	◆ ◆ ◆	◆
Member Services	◆ ◆	◆ ◆ ◆
Member Control	◆ ◆	◆ ◆
Strong Sense of Ownership	◆ ◆	◆ ◆ ◆
Common Cultural Background	◆ ◆ ◆	◆ ◆ ◆

6.2.1. Training and Leadership Development

The existence of training programmes with the cooperatives has contributed greatly to the development of leaders among their member base and the success of the cooperatives. Both

cooperatives have an important focus on developing proactive leadership among their member base and improving the farm management conditions of its members. The training programmes developed in CAICO and El Ceibo have had a positive effect on increasing farm management skills among members.

The focus of the training programmes on each cooperative is to provide its members with technical and management skills to improve their working conditions, as well as to prepare the members to assume decision-making roles within the cooperative. What differentiates the approach of each cooperative regarding the training programmes is the inclusion of the communities where they operate, especially for El Ceibo. This increases the deep relationship that the cooperatives have with the communities and increases the likelihood of new members to join the cooperative. In addition to these training programmes, both cooperatives incentivise their members and relatives to obtain tertiary education and formal training. It has improved the availability of a skilled workforce among members of the cooperative and their participation in the control mechanisms of the cooperative. Other studies have established similar results regarding the effects of training initiatives in the development of the member base and its participation (Banaszak, 2008; Garnevska et al., 2011; Khumalo, 2014; King, 2001; Zarafshani et al., 2019). However, there are few examples of a widespread approach like the one observed in these two cooperatives.

These training programmes are the main hub for the formation of leaders among the member base. Both cooperatives put a special emphasis in the development of leaders through these programmes. These leaders contribute to the efficiency of the management process of the cooperatives and enable the generational change in each cooperative's member base. Additionally, the leaders in the first-level cooperatives contribute to the efficiency of the application of policies and increase the cooperation among members. Other studies have shown similar results with the development of leaders (Garnevska et al., 2011; Harrel, 2018; Hidalgo-Fernández et al., 2020; Khumalo, 2014). Due to the constant training and better access to higher education the leaders in each cooperative are better prepared to deal with the increasing complexities that the growth of both cooperatives generates. This supports the results of other studies that establish that strong leadership and access to training contribute greatly to the success of cooperatives (Banaszak, 2008; Garnevska et al., 2011; Golovina et al., 2014; Harrel, 2018; Khumalo, 2014; King, 2001).

However, it is worth noting that other studies have shown that a lack of specialisation and knowledge of the cooperative model reduces the efficacy of these training programmes (Sanchis Palacio et al., 2015; Server-Izquierdo & Lajara-Camilleri, 2016). To account for this, the cooperatives emphasise a

bottom-up approach to the formation of leaders and by incentivising a deeper knowledge of the industry.

6.2.2. Economic Incentives for Members

The creation of economic incentives for the members is an important factor of success for both cooperatives. Even though each cooperative has a different set of economic incentives, both manage to represent an attractive financial alternative for its members. Both cooperatives have developed economies of scale to reduce the input costs for members and guarantee better prices for its members. This agrees with what has been determined in the literature as a crucial element for small scale farmers because it maximises the profitability of their operations and generates long-term commitment to the cooperative (Khumalo, 2014; Mera-Bastidas et al., 2019; Ranjan, 2017; Schmit & Severson, 2019; Sexton & Iskow, 1988). Given the size and characteristics of the member base of each cooperative, the increase in bargaining power generated by the economies of scale reduces the dependency on intermediaries and increases the profit margin for the members thus mitigating the effects of subsistence farming. A similar effect was observed in other studies done on farming cooperatives in South America (Hidalgo-Fernández et al., 2020; Mera-Bastidas et al., 2019).

Another important factor that contributes to the economic incentives that the cooperatives provide for its members is the availability of financing alternatives. Both cooperatives have developed credit schemes to provide support for operational costs and investment initiatives for their members. The lower cost of these credits, particularly the short-term operational ones, increase the availability of funding for members and increase liquidity for their operations. The access to credit sources has increased the amount of throughput that members are able to send through the cooperative and incentivise non-members to join, as also established in the literature (Tekdemir, 2017; Woldegebrial Zeweld et al., 2013).

Of the two cooperatives, El Ceibo has been able to generate better economic incentives for its members. The cooperative's efforts in developing markets and value-addition to its throughput has allowed it to become one of the few agricultural cooperatives in Bolivia that generates and distributes profits from its commercial operations. Additionally, the cooperative's policies regarding paid staff positions and the bonuses it provides to its members contribute to the returns that members receive from being part of the cooperative and generates incentives for new members to join. This has contributed to the growth of the cooperative in terms of membership and operation size. CAICO, on the other hand, has struggled to remain profitable due to the policies restricting access to international markets and artificially low domestic prices generated by these restrictions. However,

the cooperative still represents a financially attractive option for the members, through the reduction of transactional costs, despite the lack of distribution of surplus.

6.2.3. Strategic Management

Both cooperatives have a deeply ingrained strategic thinking culture that has contributed to their constant growth. This is reflected in the nature of the long-term decisions made by the cooperative and the constant adaptation to the changes in the external environment. Both cooperatives aim to achieve their overall objective: maximising the returns for their members. An example of this is El Ceibo's decision of continuing to develop their presence in the national market with finished products instead of depending on the international market for the sale of raw materials. Additionally, CAICO's partial demutualisation process generated by the change in legislation, is another example where a strategic mindset was effectively implemented to overcome a potential risk. The importance of this strategic focus for both cooperatives is in accordance to what is established in the literature (Barati et al., 2017; Graetz, 2002; Komulainen & Siltala, 2018). However, in the Bolivian context, having a defined strategy-oriented ethos is very uncommon due to the subsistence-farming nature of most agricultural initiatives. This is because most agricultural initiatives, especially among small-scale farmers, have a greater emphasis on operational efficiency and do not implement strategic frameworks (Salazar, Aramburu, Gonzalez-Flores, & Winters, 2016).

However, of the two cooperatives, only El Ceibo has a formal definition of strategic objectives with a five-year outlook. These objectives established the growth goals and the expansion projects that the cooperative set to develop over that period. Based on this determination, the cooperative established the construction plans for their new processing plant. This generates a more efficient allocation of resources across the cooperative and a less ambiguous management process. Even though the literature establishes that this is an important factor (Davis, 2016; Kinnunen, 2019), the implementation and fulfilment of this plan also plays a decisive role (Siddique & Shadbolt, 2016). The democratic process for the formulation of these objectives also contributes to a better alignment between the objectives of the members and the cooperative. Conversely, CAICO does not have a formally defined strategic framework. For this reason, the cooperative continually adapted its operations and the markets they work with. From being initially focused on cotton production to producing grain and cattle nowadays, CAICO has constantly adapted itself to remain competitive.

6.2.4. Member Services

The creation of member service initiatives within the cooperatives increases the operational efficiency of the farmers, their yields, and the quality of their production. This has played an important role in

the success of both cooperatives. They have developed technical support for their members and an R&D department focused on improving the quality of the inputs and genetics for better adaption to the characteristics of the regions where they work. The development of research and extension initiatives has been identified in the literature as one of the main factors that contribute to the success of cooperatives because of the effect they have on the members throughput (Banaszak, 2008; King, 2001; Sanchis Palacio et al., 2015; Schmit & Severson, 2019). Additionally, other studies on farming cooperatives show that small scale farmer cooperatives can distribute the risk of innovation in farming practices better than the members would be able to do on their own (Bukchin & Kerret, 2020; Luo & Hu, 2014). This is congruent to the results observed in CAICO and El Ceibo where the individual farmers manage to reduce the risk of investing in these costly initiatives through the support of the cooperative.

A common trait that differentiates El Ceibo and CAICO from other cooperatives and companies in their implementation of these R&D initiatives is the focus on making them financially sustainable. By making the results of the R&D initiatives available to non-member farmers in the area, the cooperatives minimise the risk of inefficiencies generated by cross-subsidisation of the operating costs of these areas. This also contributes to maintaining the strong relationship that the cooperatives have with the communities where they work. Additionally, by making the agricultural inputs, seeds, and other materials available to non-members, the cooperatives reduce the adaptation costs for farmers that decide to join the cooperatives.

Another important service that the cooperatives, particularly El Ceibo, provide to its members are the welfare programmes. These services are focused towards reducing the lack of accessibility to welfare systems like health insurance or retirement pensions usually present in small farmer communities in developing countries. This is similar to the results of other studies done on cooperatives working with farming communities in developing countries (Dirimanova, 2018; Khumalo, 2014; Woldegebrial Zeweld et al., 2013). Overall, these programmes increase the member satisfaction with the cooperative and increase their permanence horizon in the cooperative.

6.2.5. Member Control

The clear definition of the member control mechanisms and the governance structure is another important factor of success for the cooperatives. The implementation of an effective governance structure and the participation of members in them play a fundamental role in the management process of the cooperatives. These elements have been determined by the literature as one of the most important factors that ensure the long term functioning of the cooperative whilst increasing the efficacy of its management (Birchall, 2018; Chaddad & Cook, 2004; Cook, 2018; Darrell & John, 2016;

Iliopoulos, 2015). Additionally, the perception that these control mechanisms ensure that the cooperative works appropriately as an agent for the members and that their opinions are heard also contributes to increasing cooperation among members. This is also consistent with other studies performed on cooperatives with large member bases (Casaburi & Macchiavello, 2015; Fulton & Giannakas, 2001; Paranque & Willmott, 2014). The efforts of both cooperatives towards maintaining the member control structures through the incentivisation of a democratic participation from members have had a positive effect on their management structure.

Even though the formal governance structures of both cooperatives are determined by the current cooperative legislation, each cooperative has opted for a different approach regarding the implementation of this structure. These differences are mostly observed in the roles that members are expected to perform within the cooperative and the pathway towards applying for a board position. The legislation establishes that only members can occupy roles in the governance structure of the cooperative. However, both cooperatives depend almost exclusively on their members, relatives of members, and members of the community for the different positions of their management structure. Despite the evidence shown by studies that suggest a trade-off between the specialisation of members and their participation in the management of the cooperative (Adamišin & Kotulič, 2013; Brandão & Breitenbach, 2019), both cooperatives rely on the grassroot knowledge of the cooperative by members and the training programmes to overcome these challenges. The importance of these training initiatives for creating a professional management staff has been established in the literature (Bruynis et al., 2001; Cook, 2018).

For that reason, CAICO established a clear differentiation of the roles that the members and their relatives are expected to fulfil. CAICO's members only occupy positions within the governance structure whereas relatives and members of the community occupy the decision-making positions in the management structure. On the other hand, El Ceibo does not make that differentiation and determines the assignments of one position within the management structure for each member or their relatives with a rotative scheme to avoid the formation of influence groups. In both cases, the members rely on formal and informal control channels to exercise their control rights.

6.2.6. Strong Sense of Ownership

Both cooperatives have developed a strong sense of belonging among their member base that increases their engagement with the cooperatives and their success. The members of the cooperatives have a deeply ingrained sense of ownership and responsibility for the management of the cooperative that generates high levels of identification with and belonging to the cooperative. This is also influenced by the generational structure of the membership that makes the members perceive their

role in the cooperative as part of their legacy and generate responsibility for the work that their predecessors made in their time. This ensures a long-term permanence in the cooperative and the continuation of the generational structure of their member base.

A deeply ingrained sense of ownership within the cooperatives generates an increase in the willingness to cooperate through the strengthening of the relationships among members of the cooperative. Studies on Polish cooperatives show that the development of these kind of relationships have a strong effect on the success of the cooperative (Banaszak, 2008). This also increases the social capital of the cooperative and it is closely related to the commitment of members to the common objectives, which is also similar to the findings in other studies on agricultural cooperatives (Holden & Tilahun, 2018; Holland et al., 2013). Additionally, other studies show that, in the context of small farmers in developing countries, strong ties generated by a common sense of ownership also increase the participation of members in the cooperative (Garnevska et al., 2011; Zheng et al., 2012). Moreover, the literature shows that the existence of common needs increase the identification with the cooperative and increase the likelihood of cooperation (Ranjan, 2017; Yarker et al., 2020). This is similar to the results observed in El Ceibo and CAICO. The view of the cooperative as a medium to overcome these common needs and achieve common objectives drive the sense of ownership that the members have towards their cooperatives. This has a direct effect on the high levels of throughput that the members deliver to the cooperatives without the need of penalties as other studies indicate as necessary. However, other studies done on other cooperatives show that the implementation of a series of penalties is necessary to dissuade members from selling their production outside the cooperative (Casaburi & Macchiavello, 2015). Additionally, due to this sense of ownership, the members of El Ceibo and CAICO are more likely to participate in the governance of the cooperative despite the high requirements of the positions in terms of time and commitment.

6.2.7. Common Cultural Background

The members of each cooperative share a strong common cultural background that has a substantial effect on the way the cooperative is structured, and how its operational mechanisms have been implemented. Even though the two cooperatives come from very different backgrounds, one coming from indigenous farmer communities from the highlands of the country and the other from Japanese migrant groups, both were influenced by their respective ancestry in their predisposition towards cooperation and their internal dynamics.

Both groups had a considerable predisposition towards cooperation that helped to establish the cooperative and its maintenance over time. In the case of El Ceibo, the original colonisers that settled in the area and formed the cooperative came from indigenous farming communities in the highlands.

Studies of the region show that these groups traditionally depend on reciprocal collective-action initiatives to overcome the lack of mechanisation and resources characteristic in subsistence-based farms in the highlands (Devaux et al., 2009; Walsh-Dilley, 2017). Practices like Ayni, where the community works as a collective unit to work on a specific farm in exchange for an expected reciprocal response in the future, are well-established dynamics that transcend the agricultural work and determine the social interaction of members of those communities (Paerregaard, 2017; Wutich, Beresford, & Carvajal, 2017). A similar effect can be observed among the member base of El Ceibo as demonstrated by the perception of the work within the cooperative. Likewise, the original migrants that founded CAICO came from a cooperative background in Japan and established a cooperative as soon as they established the first colonies. These antecedents still have a considerable influence on the willingness to cooperate among the members of the cooperative because they defined the identity of the cooperative. Similar effects have been observed in other cooperative studies where strong relationships and cultural values were observed to affect the likelihood of cooperating (Pansera & Rizzi, 2020; Ranjan, 2017). However, what differentiates the cooperatives from the literature is that their common cultural backgrounds have a strong ethnic base in addition to the community-based relationship.

Another considerable effect that this common cultural background has on the cooperatives relates to the implementation of cultural dynamics across the member control mechanisms. Practices like the rotative nature of management positions and the perception of work within the cooperative as a duty that every member must fulfil are clear examples of this influence. Most of these practices are focused on establishing self-accountability among members to diminish the risks associated with agency costs. This agrees with the relation that other studies on agency costs and the participation of members suggest (Bukchin & Kerret, 2020; Paranque & Willmott, 2014; Yarker et al., 2020). However, what differentiates these practices are the deep roots they have in the collective ethos of the cooperative and the bottom up nature of the dynamics that facilitate their widespread implementation.

6.3. Challenges to the Cooperatives

The cooperatives face a series of challenges that were identified for the two cooperatives studied. These challenges are divided into two categories: internal and external challenges. The internal challenges relate to two main problems that are inherent to the inner operation of the cooperatives, such as: the definition of property rights and agency costs (Cook & Iliopoulos, 2000; Nilsson, 2001). Conversely, the external challenges section will analyse the effect that are outside the control of the cooperative such as, the economic, political, legislative, and institutional context of the country has

on the success of the cooperatives. This section will analyse how these problems are manifested in the cooperatives and how they deal with them.

6.3.1. Internal Challenges

Both cooperatives share a similar structure due to the legislation in the country and, thus, face certain common challenges. This section will analyse the internal challenges that both cooperatives face and contrast their approach with what has been established by the literature. The first part will analyse the problems related to the definition of property rights and the investment related problems it brings. Conversely, the second part will analyse the decision related problems generated by the agency costs that the cooperatives face.

Investment Related Problems

Both cooperatives have generated an external free-rider problem by making the results of their R&D initiatives available for non-members of the cooperatives. This problem, however, was created wilfully with the objective of making these R&D financially viable for all members of the communities. By making them independent from the budget of the cooperative, CAICO and El Ceibo have avoided a possible subsidisation of these costly processes. Despite the cooperative literature establishing that the existence of these external free-rider problems dilutes the ownership of the cooperative and reduces the incentives for new members to join the cooperatives (Borgen, 2004; Cook & Iliopoulos, 2000; Iliopoulos, 2015; Olthaar & Noseleit, 2017), the cooperatives' approaches have managed to achieve the opposite. Besides reducing the risk of subsidisation for these R&D initiatives, the cooperatives also reduce the adapting costs for new members. This has increased the incentives for new members to join the cooperative by increasing the benefits associated with it.

There are several weaknesses in the cooperative movement in Bolivia including the value of member shares. The lack of trading mechanisms to obtain a market price for these shares when a member seeks to exit the cooperative complicate the definition of the collective's ownership rights. This reduces the ability of cooperatives to properly reflect value of their investment in infrastructure and operations when new members seek to buy-in to the cooperative. The cooperatives do have policies to constantly update these membership costs based on a democratic definition of prices by the member assembly. However, this updating system to the membership costs can introduce subjectivity to this process. These problems are consistent with the ones identified in the cooperative literature (Hansmann, 2000; Nilsson, 2001). El Ceibo's structure, based on first and second level cooperatives, allows first-level cooperatives to adjust individually the membership costs. This allows the first-level cooperatives to better reflect the infrastructure levels and services to members they provide.

However, the fact that the affiliation cost to the second level cooperative remains uniform for all cooperatives could generate a common-property problem considering the scale of the new expansion projects. In terms of CAICO, the partial demutualisation process that created the two companies in charge of processing allowed them to overcome some of the limitations that the cooperative legislation presents. However, the increase in costs that joining these two companies created generates a barrier for small farmers that join the cooperative. Considering that most of the new potential members will come from a subdivision of existing farms owned by the parents, these barriers represent a potential threat to the growth of the cooperative.

Regarding the structure of the investment portfolios of the cooperatives, both cooperatives have adopted different approaches that generate different challenges. Given the large scale of the infrastructure that each cooperative has developed for its members, future expansion projects tend to have a considerable size and be perceived as riskier. Additionally, a growing heterogeneity in preferences among the members of the cooperatives generates a difference in their attitude towards risk. This agrees with the challenges observed in the literature where these differences can negatively affect the cooperative's portfolio of investments by rejecting more profitable but riskier options (Cook & Iliopoulos, 2000; Iliopoulos, 2015; Nilsson, 2001). CAICO's current lack of expansion projects is an example of these problems. Older members of the cooperative have a lower propensity to risk and have influenced the acceptance of expansion projects. Conversely, El Ceibo's approach to expansion projects based on their individual returns has allowed them to ensure the profitability of their investments. However, the lack of other evaluation methods leaves them vulnerable to errors in the expected revenue that they generate.

Decision Related Problems

A divergence between the interests of the agents and the principals in the cooperatives generate inefficiencies in the management process of the cooperative (Borgen, 2004). Given the nature of the cooperative structure and the large member base of both cooperatives, the literature establishes that the problems generated by these differences in preference can generate negative results for the cooperatives (Iliopoulos, 2015). As the cooperatives' operations grow, the complexities related to the management process also increase. This creates the need for dedicated and professional staff that can handle these increasing complexities and maximise the returns for the members. However, this also creates increasing agency and control costs for the cooperatives, which is congruent with the observations found in the literature (Nilsson, 2001).

To deal with these increasing agency costs, both cooperatives have opted to include members, their relatives, and members of the community as part of the management staff. This reduces the agency

costs considerably, but also creates some challenges to the decision-making process of the cooperatives. The majoritarian participation of members and their relatives in the staff can generate bias in the management process. Considering that most of them share the same background, the lack of external voices can limit the scope of analysis of the cooperative and generate inefficiencies. Additionally, it could generate the existence of influence groups that impose their vision over the rest of the cooperative. However, the focus on democratic participation minimises that risk, especially considering El Ceibo's rotation scheme. CAICO, on the other hand, has shown some signs of these challenges on the effect that older members have on the approval of expansion projects within the cooperative.

6.3.2. External Challenges

Analysing the external challenges that each cooperative face is important to understand the context in which they operate. These environmental factors have a considerable effect on the cooperatives because they determine the conditions that the cooperatives face. These elements are the market, political, legislative, and institutional contexts of the country and their effect on the cooperatives will be analysed.

Both cooperatives work with different products and markets, however, the commodity nature of their production creates some similar challenges. The literature shows that the development of value chains in the industries and the conditions of the markets the cooperatives work in have a considerable effect on the development of the cooperatives (Dirimanova, 2018; Server-Izquierdo & Lajara-Camilleri, 2016; Wassie et al., 2020). Both cooperatives were initially focused on exporting their production as raw materials and thus were very dependent on international commodity prices. However, over time both cooperatives shifted towards generating more value-added products to reduce the risk associated with commodity markets. Nevertheless, the cooperatives are still exposed to risks created by changes in market conditions. Due to the nature of their members on mostly small sized farms, their individual profitability is highly dependent on the high stable prices provided by the cooperatives. Therefore, depending on one big client or changes in market growth, generates high risks to the income projections for the cooperatives.

The current political context of the country is very unstable due to the recent changes in government. During the tenure of the transition government there was a change in the direction of policy that benefited the cooperatives. An example of this is the elimination of the export bans on crops that the previous administration established. However, after the elections and the return of the previous party in government there is uncertainty about the continuity of these changes. The lack of predictability generated by this uncertainty makes the planning process of the cooperatives difficult and affects

their decision-making horizon. This in in line with the literature that establishes that stability in the political context of a country has a direct effect on cooperatives and their risk assessment (Faulhaber, 2000; Luo & Hu, 2014; Zarafshani et al., 2019).

The legislative context in which the cooperatives work defines the basic structure that each cooperative in the country must have and defines the nature of their membership and formal control mechanisms. The literature establishes that a clear legislative environment has a positive effect on the growth and development of cooperatives (Garnevska et al., 2011; Houessou et al., 2019). The current legislation in Bolivia establishes a very clear and defined structure of the cooperative movement in the country. However, there are certain aspects of this legislation that create challenges for the growth of agricultural cooperatives. It was observed that the new legislation did not fit properly the needs of the agricultural sector. The main issue with the legislation is the nature of tax policies. The lack of tax incentives and the extra payments the cooperatives have to make to the overseeing institutions increase the costs for the cooperatives. Despite some studies indicating that these incentives are important to the development of cooperatives (Olthaar & Noseleit, 2017; Tekdemir, 2017), there is evidence that indicates that these policies introduce inefficiency in the cooperatives (Bennett, 2017; Medina-Albaladejo & Menzani, 2017). However, other important issues related to the lack of recognition of communal membership of the cooperatives were also mentioned as a limitation of the legislation. Despite the legislation recognising collective ownership by the cooperative, the membership of the cooperatives is individual. Considering that most farmers work within their family circles and most of their agreements are verbal, the recognition of communal membership is another of the demands of the sector. Additionally, the legislation does not allow external managers to work in the cooperative. This limits the access to professional personnel to cope with the growth of the cooperatives. According to the interviewees, these concerns have been raised to the authorities, but negotiation scenarios have been scarce and unsuccessful.

The context of the institutions that oversee the cooperatives in Bolivia has been unstable since the implementation of the new legislation. Due to the changes in legislation and the change in government, these institutions have been either recently formed or have undergone restructuring. Additionally, these institutions have been underfunded by the previous government and lack updated information on the current state of the cooperative sector. This has reduced the efficacy of the programmes implemented by these institutions that have been mostly focused on helping the cooperatives with the transition to the new legislation and mediating in conflicts. Also, the high level of politicization in the direction of these institutions reduces the coordination of policies. An example of this is the fact that all the heads of the governmental institutions were changed with the transition government and only have been in office for a couple of months at the time of the interviews.

Furthermore, the main institution in charge of coordinating the work of the overseeing institutions and the government, the Advisory Council, was not implemented despite being included in the legislation. This can also be observed in the literature where considerable influence of the government and politics over institutions is detrimental to the development of cooperatives (Mera-Bastidas et al., 2019; Zarafshani et al., 2019). Another important challenge to consider is the lack of unity in the higher levels of the Bolivian cooperative sector. Each fourth level cooperative makes independent decisions and there is limited sharing of information among them. This also reduces the capacity for providing support to the cooperatives, which was identified as a considerable benefit to cooperatives by the literature (Olthaar & Noseleit, 2017).

CHAPTER 7. Conclusions

Cooperatives have a long history in Bolivia and have played an important role in overcoming the challenges presented by the lack of development of small-scale farmers in the country (Mogrovejo & Vanhuynegem, 2012). However, the development of the cooperative sector has been characterised by a lack of stability and constant changes, relating to the unstable political environment (Mogrovejo & Vanhuynegem, 2012; Moller, 1987). This has generated a lack of support and information on the state of cooperatives in Bolivia.

Agriculture is one of the most important sectors in which Bolivian cooperatives have had a considerable effect (Villaroel, 2014). However, very little has been written on understanding the drivers of their success and the challenges they face. The objective of this study was to bridge that gap and analyse the factors that determine the success of agricultural cooperatives in Bolivia and the challenges they face. For this purpose, the two agricultural cooperatives with the largest membership of the country were analysed. Despite the differences between the two cooperatives, several key factors were identified by the study.

This chapter summarises the main findings of this study. The first part analyses the factors of success that were identified in each cooperative and how they compare between the two. Then, the findings regarding the challenges that the two cooperatives face will be analysed. After that, the limitations of the study will be presented. Finally, recommendations to the cooperatives and policy makers will be made.

7.1. Factors of Success for Cooperative

El Ceibo and CAICO are two of Bolivia's biggest agricultural cooperatives and analysis found their success came down to several factors. Of these factors, seven were identified as having the most relevance for the cooperatives. These factors were training and leadership development, economic incentives for members, strategic management, member services, member control, a strong sense of ownership, and a common cultural background. However, due to the different characteristics of the cooperatives, each implemented these factors in different ways.

The first success factor was training and the development of leadership among the cooperatives. Both cooperatives have developed training programmes to develop their member base and generate better prepared leaders. The importance of these training programmes was well established in the literature (Banaszak, 2008; Garnevska et al., 2011). However, the different approaches they took came from an emphasis on reaching the communities in which they work, and this increased the availability of a skilled workforce and incentivised new members to join the cooperative. El Ceibo had a more active

role on the scope of its training programmes, whereas CAICO's was more limited. These training programmes helped to increase the effectiveness of the leadership among the cooperative members. The presence of these leaders in the cooperatives increased the efficiency of the control mechanisms and the communication between the members and the cooperative (Garnevska et al., 2011; Harrel, 2018). This contributed significantly to the success of the cooperatives by increasing the willingness to cooperate among its members and the efficiency of the management process.

Another important factor identified was the existence of economic incentives for members. These incentives refer to the economic benefits the farmers received from being members of the cooperative, such as reduction in operational costs, better prices, and access to credit. These benefits increased the profitability of the members' small-farm operations while incentivising them to remain as members. These incentives have been observed as important to minimise the effects that subsistence farming has on small-scale farmers in developing countries (Khumalo, 2014; Mera-Bastidas et al., 2019). Of the two cooperatives, El Ceibo was the only one that distributed profits among its member base. CAICO did not generate a surplus directly, however, the members that had shares in the two companies that were formed from the partial demutualisation process received a distribution of profits. The availability of affordable credit also improved the operational capacity of the members by increasing the availability of funds for operational costs and farm improvement projects.

A well-established ethos oriented towards strategic management that was also a considerable factor of success in the cooperatives. Both cooperatives had a strong strategy-oriented culture that guided the decision-making process for their operations. The existence of strategic objectives and an efficient implementation has been recognised in previous studies as an important factor to diminish the ambiguity of the management process of the cooperatives (Graetz, 2002; Kinnunen, 2019; Siddique & Shadbolt, 2016). However, only El Ceibo has managed to establish a formal strategic planning framework for the cooperative's operations whereas CAICO has a less structured, more agile, approach.

The services that the cooperatives provided for their members were an important factor for their success. By providing technical support, R&D initiatives, and welfare programmes, the cooperatives increased the productivity of their member base as well as their living conditions. This increased their members' throughput levels and their identification with the cooperative (Banaszak, 2008; Dirimanova, 2018; King, 2001; Woldegebrial Zeweld et al., 2013). Both cooperatives put a considerable emphasis on the self-sustainability of these initiatives, reducing the subsidies the cooperatives needed to provide over time.

Another important factor was the member control structure that both cooperatives implemented. By establishing a clear governance structure and implementing informal control mechanisms, the cooperatives increased the democratic participation of their members. This increased the efficiency of the management process and reduced agency costs (Birchall, 2018; Cook et al., 2004). The cooperative legislation defined the formal structure of the cooperatives and their tenures. However, both cooperatives implemented different procedures for appointing members into these positions. These procedures were based on minimising influence-cost problems and a bottom-up approach. Both cooperatives had a high level of participation from their members and the community, however CAICO did not have members working in the management of the operational part of the cooperative.

The strong sense of ownership that the members had over their cooperatives was another important factor of success. This ownership was characterised by a strong sense of belonging through the deep relationship between the cooperative, its members, and the communities where they worked. This translated into a better disposition to work within the cooperative structure from the members and a reduction in the need for penalties to dissuade opportunistic behaviour. Some studies showed that the existence of common needs and non-economic factors generates a similar increase in the willingness to cooperate (Ranjan, 2017; Yarker et al., 2020), but the literature still established the need for penalties to deter opportunistic behaviours has been established as a necessity in the literature (Holden & Tilahun, 2018; Sanchis Palacio et al., 2015). What differentiated El Ceibo and CAICO's approach was that this sense of ownership reduced the need for enforcing penalties and controls on throughput.

Finally, one of the more unique factors of success identified in the cooperatives was the existence of a common cultural background. Even though some studies have found that strong communal relationships and cultural values have a positive effect on the willingness to cooperate among members (Pansera & Rizzi, 2020; Ranjan, 2017), the ethnic characteristics of these common cultural backgrounds generated a deeper dynamic. The cultural dynamics generated by the common ancestry of the members helped to shape the internal policies and the perception of the role that members have throughout the cooperative. These dynamics transcended the economic relationship of the members to a social and communal level. They improved the adoption of each cooperative's objectives and policies.

7.2. Challenges to the Cooperatives

This section summarises the challenges identified for both cooperatives. These challenges are divided into two categories: internal and external. The internal challenges refer to the challenges generated

within the cooperatives and the external refers to the environmental factors that have an effect on them.

The internal challenges that the cooperatives faced refers to two main problems. The first kind of problems were investment related problems. These ones related to an unclear definition of formal and informal property rights within the cooperatives. The main challenge that the cooperatives faced in this respect was the valuation of the market price of their membership shares. The lack of trading markets for these shares meant that the growth of the cooperative did not always translate in the price of their shares. This increased the risk of developing a free rider effect on new members of the cooperative. This was particularly important considering the existence of sizeable expansion projects as in the case of El Ceibo. The other kind of internal challenges refer to decision related problems. These problems related to the growing level of complexity that the size of the cooperatives introduced to the management process. More complex operations require professional management staff and increased agency costs. The cooperatives opted for employing qualified extended family and members of their communities. However, this could create bias in the management process and increase the risk of creation of influence groups.

The external challenges relate to the factors outside the control of the cooperatives but that had a profound effect on their operations. The first of these challenges related to the political context of the country. Bolivia has experienced a very unstable political landscape over the last couple of years. This unpredictability affected the cooperatives' forecasting abilities. Another important challenge came from the legislation controlling cooperatives. Despite the modernisation of the cooperative law, it did not consider specific needs of agricultural cooperatives, such as tax policies and communal ownership. Finally, another major challenge to the cooperatives was found to be related to the context of institutions in the country. Historically, the institutions overseeing the cooperative movement in Bolivia have been under constant restructuring and change. This creates a lack of support and continuity in policies. Additionally, the high levels of politicisation of the institutions and the lack of information reduced their efficacy further.

7.3. Limitations of the Study

The following were the main elements that limited the scope of this study.

- The study was limited to only two cooperatives and may not be representative of the whole sector.
- None of the cooperatives agreed to disclose financial information to be included in the study. This limited the scope of analysis of the cooperatives.

- The data collection was performed before the COVID 19 outbreak, so it does not include the effects that the pandemic has had on the cooperatives.
- The institutions interviewed did not have updated information on the current status of the cooperatives in Bolivia. This reduced the amount of secondary data available for analysis.

7.4. Recommendations and Further Research

This section will provide recommendations based on the results of the study to the cooperatives, policy makers, and future researchers. This study tried to analyse in depth two successful agricultural cooperatives in Bolivia. However, more research is needed to generate a better understanding of the sector.

Despite being among the largest agricultural cooperatives in the country, CAICO and El Ceibo face several challenges in the future that must be addressed to ensure their continual growth. For El Ceibo, the cooperative has shown constant growth over the last decade and this has been accompanied by a growth in investments. However, the size of the new expansion project is considerably larger than the previous projects and it is based on a projection of growth of throughput to twice the current size. Despite the implementation of a strategic plan and indicators of growth, the goals established could prove to be too large. Considering the amount of resources forecasted for the new plant, re-evaluating these growth goals and adjusting to the current situation of the cooperative is essential.

For CAICO, after the partial demutualisation process, the cooperative is facing a severe change in the economic role it has for its members. Given that most of the value-addition initiatives are in control of the companies created after conforming to the new legislation, the cooperative must evaluate what its new role will be in the value chain. The development of a formal strategic framework could be helpful to establish what the long-term objectives of the cooperative will be and establish indicators of progress to achieve them.

The institutions and policy makers in the country also face uncertainty after the political changes of the last couple of years. Generating a more stable environment is essential to increase the efficacy of policy for this sector. If the multiple resources established in the legislation are fully developed and implemented, communication with the different levels of the cooperative movement will increase. This will allow the generation of more pertinent regulations for the specific sectors that will better reflect their different needs.

Finally, there is a need for more research on agricultural cooperatives in Bolivia. The theoretical and analytical development in this area is very limited. Larger studies that include other cooperatives

based on different regions and of different sizes is needed. Financial data and more coordination with governmental databases are essential for these future studies.

Appendices

Appendix 1 History of Land Distribution in Bolivia

To understand the development of land tenure in Bolivia, it is important to analyse the historical processes that led to the current state of land tenure. For this purpose, a brief summary of each of the main historical periods that helped shape land ownership in the country will be presented This analysis will provide the reader a better understanding of how the different historic processes shaped the marked differences between the evolution of agriculture and land ownership in the highland and the lowlands of Bolivia.

Pre republican era (Before 1825)

The period before the formation of the republic can be divided into two different eras: the Pre-Hispanic, and the colonial era. Each of these periods have a conversely different approach towards the ownership and distribution of land. However, regardless of the differences between each period, both approaches had such a lasting effect on land distribution that these effects are still present in different ways in the current context of the country.

The pre-Hispanic period of the area that would later turn into Bolivia was characterised by a hegemonic control of the Highlands and sub-Andean valleys by the Inca Empire, and a wide array of small ethnic groups in the Amazonic lowlands (Gisbert, 2016). The influence of the Inca Empire was extended throughout the Andes mountain range and was characterised by the assimilation of different conquered ethnic groups, like the Aymaras or Urus predominant in the departments of La Paz and Oruro. These conquered groups were allowed to maintain most of their cultural costumes and were integrated into the trade routes generated by the empire (Murra, 1978). Additionally, they were required to send groups of labourers to work in public service tasks, such as building and maintaining infrastructure or military endeavours, for the empire based on a rotational system called Mit'a. Also, in terms of land distribution and ownership, communities were organised in local groups called Ayllu (Rostworowski & Morris, 1999). These social units were formed by close groups of people with strong reciprocal relationships and dedicated to different agricultural endeavours.

On the other hand, the development of the ethnic groups in the lowlands was less cohesive than the one of the highlands. Just in the territory of what now is Bolivia, there are more than 20 different ethnic groups that lived scattered around the amazon rainforest (Lema, 1997). In terms of population size, these groups were, and still are, considerably smaller and based on hunting, foraging and small subsistence agriculture for food in the fertile environment of the Amazon. These amazonic groups

lived in small communities with their own organisation systems, and lived relatively isolated from the groups from the highlands (Mesa & Espinoza, 2009d).

With the arrival of the Spanish in the early sixteenth century came the downfall of the Inca Empire and the process of conquest of the continent. The Real Audiencia de Charcas, dependent on the Viceroyalty of Peru, was established in what would later be Bolivia, and the cities of La Plata, now Sucre, and La Paz were founded and served as the foundation of the Spanish political control over the area (Gisbert, 2016). Similarly, mining centres formed around the Cerro Rico in Potosi, one of South America's largest silver mines, and had big influence on the economic development of the Region (Lopez, 1988).

The foundation of these new political and economic centres had a major influence in the development of the highlands. The Spanish authorities started granting considerable extensions of land to loyal Conquistadores with serfdom rights over indigenous communities that lived there. However, several important communities were maintained under the administration of indigenous leaders under the condition that they provided with labour under the same conditions of the Mit'a system that was prevalent during the Inca Empire (Lopez, 1988). This was fundamental to the colonization process because of the direct link that it provided between indigenous communities and the Spanish authorities.

Conversely, due to the geological and climatic difficulties that the Amazon rainforest present, the colonization of the lowlands was not as expeditious as in the highlands. Besides, the lack of natural resources that were of interest to the Spanish colonizers, generated a low incentive for the formation of big population centres in this region (Gisbert, 2016). In the case of the lowlands, the group that led the colonisation process were Jesuitical missionaries that took the task of evangelising these indigenous communities(Mesa & Espinoza, 2009d). This process generated the aggregation of communities around the Missions erected by the Jesuitical priests. These missions were divided among two regions, the missions of Chiquitos in Santa Cruz and the missions of Moxos in Beni (Gisbert, 2016). These evangelising missions also introduced beef cattle and certain crops like rice that were fundamental for the subsistence of these new formed communities. However, after the expulsion of Jesuitical, most of these missions were abandoned and most of the population concentrated around the main cities like Santa Cruz. Nevertheless, the introduction of cattle and crops cemented the future agricultural tradition that characterises this region.

Early Republican Era (1825- 1830)

After the independence from the Spanish in 1825, the country experienced a transformation process to consolidate the new formed country. The influence of Spanish colonizers persisted despite the separation from the crown in the form of the haciendas, large extensions of land controlled by one family (Goudsmit, 2008). The serfdom relations between indigenous communities and landowners that were prevalent during the colonial era maintained their importance in society (Mesa & Espinoza, 2009c). An example of this is the fact that big landowners were entitled to a portion of the production of the communities that lived inside their haciendas and could use their labour for free, even send them to work for another landowner if they needed to settle a debt (Goudsmit, 2008).

In economic terms, mining was still the main activity for the country, and it was concentrated in the highlands. This generated that most of the investment in infrastructure for the integration of the country, such as roads and railways, was concentrated in this region and led to a faster development of cities in the highlands (Hudson & Hanratty, 1989). This can be seen in the fact that La Paz represented 32%, and Santa Cruz 9% of the total population of the country in 1950 (INE, 2001). However, despite the growing importance of the cities, most of the population was still rural, a considerable 73% by 1950 (INE, 2001).

The early republican years were characterised by a series of disputes regarding national boundaries and armed conflicts. However, the conflict that had the biggest effect on Bolivian society was the Pacific War with Chile, in which the country lost its access to the Pacific Ocean. The consequences on the economic development and the geographic impact of the country resulting from the Pacific War are very significant (Mesa, 2016). As a consequence of the war, an oligarchic government system was established pursuing to benefit the elite classes even further and ignoring the needs of the majoritarian indigenous population.

In the midst of the ideological trends that maintained the indigenous communities in the country, the discontent of this forgotten majority kept growing. A process of reforming the land tenure in the country resulted in the so called Disentailment Law of 1874 which recognized only the personal ownership of land, dismantling the traditional communal ownership that was prevalent in Andean Quechua and Aymara communities (Mesa & Espinoza, 2009a). With the ratification of these law in 1881, the process of expropriation of indigenous land in favour of the elites in the country reached its peak and so did the growing discomfort of the former. Another factor that contributed to this situation was the decisive role that the indigenous militia had on the Federal war of 1898, which moved the political centre of the country from its capital Sucre to La Paz. After having secured the victory for the Liberalist faction of La Paz, a series of indigenous uprisings took place in the Bolivian highlands. Under the leadership of figures like Zarate “the Fearsome” Willka, they asked for integration into the political

structure of the country, the restitution of indigenous land, and the abolition of serfdom relationships with big landowners (Condarco, 1983). These rebellions were violently repressed, and the leaders were incarcerated and later executed, but the discontent of the indigenous majority of the country against an oppressive system was still very present.

Modern Republic (1930-2000)

The twentieth century represented a series of reforms in the structure of the country that transformed Bolivia from a semi-feudal state at the end of the last century to a more modern and inclusive society. The first landmark that served as a detonator for the revolution that was forming was the Chaco War with Paraguay (Mesa & Espinoza, 2009b). After the feeling of defeat that the signing of the Peace Treaty with Chile in 1904 left in the country, the Bolivian government made the decision of setting a precedent in the confrontation with Paraguay. This conflict arose from the dispute over the boundaries between those two countries over the territory known as Gran Chaco, rich in natural gas and petroleum. The mobilisation of troops from across the country to defend the Bolivian sovereignty over this region represented the first-time people from across the different society strata and regions of the country met each other face to face and fought for one objective. This generated a collective consciousness of the disparity of conditions for the majority of the population of the country and cemented the basis for the upcoming revolution of 1952.

Another important factor was the influence that the three major owners of mining enterprises in the country. Simon Patiño, Maurcio Hochschild, and Carlos Victor Aramayo, known as the “Barons of Tin”, controlled close to 80% of all Tin production in Bolivia (Mesa, 2016). At that time Mining represented close to 75% of the total revenue of the country and tin had just replaced silver as the biggest export product of the country. This gave the three “Barons of Tin”, particularly to Patiño, a great influence in the politics of the time, despite never having an official seat in the government (Mesa, 2016). These generated a lot of confrontation with the miners that worked with them, almost all of them coming from indigenous backgrounds. This resulted in brutal repression with military intervention that led to massacres like the one occurred in Catavi in 1942, one of the main tin mines in Potosi owned by Patiño, with an estimated of 400 casualties. This was an example of the influence of new currents of thought that claimed for a revolution of the masses.

The combination of all these factors led to the single most important event of the twentieth century in Bolivia, the National Revolution of 1952. This was generated after the Revolutionary Nationalist Movement, MNR by its initials in Spanish, won the elections of 1951 defeating the traditional Liberal party. Despite this, then President Mamerto Urriolagoitia refused to hand over the government to the winning party and chose to give it to a military government. This resulted in a civilian revolt where the

people were able to overcome the military repression and ensure the ascension of MNR led by Victor Paz. Over the next years of its tenure, Paz's government implemented a series of reforms in the structure of the country that meant the transition of the country to a modern state (Mesa & Espinoza, 2009a). These reforms were the following: the introduction of Universal Vote for illiterate people, indigenous people, and women, the nationalisation of all mines to be administered by the state, an agrarian and land tenure reform, a reform of the educative system, the creation of worker syndicates, integration of the different regions of the country, diversification of the productive matrix, and a reform of the army. These reforms, despite the challenges and failures in their application, drastically changed the country.

Even though all of these reforms had a significant effect on Bolivian society, we will analyse the three reform that impacted land tenure and agricultural development the more: the Agrarian and Land tenure reform, the integration of the regions and the diversification of the country's production matrix. The objective behind these three reforms was to shift the production structure of the country from a mineral dependent system to a more diversified agro industrial one. Additionally, the pressing issue of the concentration of land tenure among a small group of people was also a priority for this process. The way the MNR government tackled this issue was through a redistribution of land aimed to divide the big land extensions among the communities under the phrase "the land is for whom works it" (García, 1964). They sought to accomplish this with the formation of the National Council of the Agrarian Reform, CNRA by its Spanish initials. Despite the challenges in the application of the measure and the debate over whether it achieved the intended objectives, the Agrarian reform had a profound impact on land tenure, especially in the highlands. However, due to the nature of the distribution and the high concentration of population in the highlands, this division of land generated a different problem for indigenous farmers in the highlands: the proliferation of agricultural smallholding (minifundio) (Goudsmit, 2008). This meant that, even though people had ownership over plots of land, the levels of dimensions of this plot did not affect the dependence on subsistence farming. Additionally, this was accentuated by the fact that the division was made on a household basis, not considering the traditional communal ownership of land. According to critics of the reform this was the main reason behind the lack of development in agricultural production in the highlands.

On the other hand, the policies regarding regional integration and diversification of the productive matrix had an important effect on the lowlands, particularly Santa Cruz. One of the main results of these policies was the construction of the road that linked the three main cities in the Andes, the valleys and the lowlands: La Paz, Cochabamba, and Santa Cruz. This road had a significant effect on the development of Santa Cruz and the towns in between (Mesa & Espinoza, 2009d). Additionally, as part of the diversification policies, a significant proportion of the mining revenue was destined to the

development of agro-industrial initiatives in the lowlands. This measure generated a growing development of agricultural sector based on production of sugarcane and cotton in Santa Cruz, and meat cattle in Beni. Also, a colonisation process was initiated by giving miners and people from the highlands incentives in the form of land to move to the lowlands. This kick-started the rapid growth that this region has had from that point on.

Despite all the changes that the revolution of 1952 brought upon the country, these changes came at a heavy economical cost for the country. As a result of the cost of implementation of these policies, the decapitalization of the mining industry, and an international drop in the prices caused a considerable inflationary pressure in the country (Mesa & Espinoza, 2009a). Additionally, after 12 years of mandate, the MNR government faced the discontent of the Bolivian population caused by the deterioration of the economic situation. This led to a military coup d'état that started a series of military dictatorships in the country from 1964 to 1982. This military governments were characterised by a loss of institutionalisation, social instability, and further deterioration of the economic situation. In terms of the Agrarian Reform, this process was slowly abandoned during the military governments fading out due to corruption and the use of land distribution as a payment for political favours (Urioste, 2004). However, the colonisation process of the lowlands kept on growing thanks to the growing economic importance of sugarcane production and soybean production.

The return to democracy in 1982 brought back the need for retaking the agrarian reform. Two main influential events helped to define the direction where the redesign of the agrarian reform was about to take: the debate of a Fundamental Agrarian Law proposed by the Confederation of Peasant Workers Syndicate, CSUTCB by its Spanish initials, in 1984 and the Indigenous March for Territory and Dignity of 1990 (Urioste, 2004). The proposal of the Fundamental agrarian Law was based on furthering the relationship between land and the indigenous peasant communities and introduced the concepts of Original Community Lands, TCO in Spanish, which some argue was the basis for the upcoming reformulation of the Agrarian Reform. Likewise, the march of members of indigenous communities from the lowlands to La Paz accomplished to make visible the abuses of colonisers over the exploitation of natural resources in traditional indigenous lands. The demands for protection and recognition of communal land forced the government to introduce the concept of indigenous communal land into the legislation. As a result of this, in 1996 a new law for the Agrarian Reform was introduced and for the first time the existence of Original Communal Land was recognised (Colque, Tinta, & Sanjines, 2016). The process of enforcing this new law, under the newly formed Institute for the Agrarian reform or INRA by its Spanish initials, was mostly focused on the recognition of these communal lands in the lowlands. However, this process was not widely accepted by the peasant communities in the highlands (Urioste, 2004). This is a consequence of almost 50 years of private

distribution of land and a process of inheritance that fragmented the ownership even further. This shows the difficulties in establishing an agricultural development project for the highlands, where most of the land has already been distributed and heavily fragmented, and why most of the policy efforts where focused on the development of the agricultural lands in the lowlands

Present Time (2000 – 2019)

The beginning of the twenty first century was marked by the shift from what was called the "neoliberal" governments, which began with the economic reforms introduced in 1985 as a response to the hyperinflationary crisis, to a populist regime framed under the ideologies of the twenty first century socialism. With the election of Evo Morales in 2005 a new model was instituted under the premises of a more predominant role of the government in the economy of the country.

This had a profound effect on the direction of the process of land tenure policies that can be divided into two different periods. The first one of them corresponds to the period from 2006 to 2009 that represented an extension of the Agrarian Reform of 1996 (Colque et al., 2016). This extension process was characterised by a radicalisation of communal ownership of land and the abandonment of individual land concessions to peasants. However, with the introduction of food sovereignty in the new constitution and the development plan for 2025, the second period changed the course of Agrarian Reform towards expanding the agrarian frontier in the lowlands (Colque et al., 2016). This started a process that was denominated "neo-extractivism" based on the development of intensive agricultural practices for the production of crops like Soya in the lowlands (McKay, 2018). These policies resulted in a process of mechanisation of production for these crops mainly destined for export as unprocessed commodities.

The constant expansion of the agricultural frontier has resulted in a series of contradictions with the current government's policies towards protecting indigenous communities and ecologic rights of the land (Calla, 2012). Since early into his mandate, Morales has been outspoken about his concern for conservation of indigenous costumes and the millennial balance with nature they managed to achieve (Ranta, 2017). However, this is not reflected in the expansionist measures implemented to develop the agro-industrial sector of Bolivia. This has created several conflicts with communities like the roadway that crosses in the middle of and indigenous territory called TIPNIS and the ongoing fires in the amazonic part of the country.

Appendix 2: Questionnaire Guides

Questionnaire Board Members

Category	Question	Type of Question
Background	Name	Open
	Sex	Range
	Age	Range
	Level of education	Range
	Name of Cooperative	Open
	Time working with cooperative	Range
	Position in the cooperative	Range
	Tenure in the position	Range
	Number of founding members in Central	Open
	Current number of members	Open
	Date of Foundation	Open
Foundation	Are you a founder of the Cooperative?	Range
	If Yes: Why did you establish the cooperative?	Open
	If No: Why did you decide to join the cooperative?	Open
	What were the main challenges when founding the cooperative?	Open
	Challenges relating Management, governance, finance, member involvement, institutions, or legislation	Topic
	How have those challenges evolved with the cooperative?	Open
	Challenges relating Management, governance, finance, member involvement, institutions, or legislation	Topic
Membership Process	What is the process of becoming a member of the central cooperative?	Open
	Do you have any restrictions on who can be a member of the cooperative?	Open
	What is the procedure for leaving the cooperative?	
	How many new members of the cooperative have been registered over the last five years?	Open
	How many members have left the cooperative over the last five years?	Open
	How do you get new members interested in becoming part of the cooperative?	Open
	How do you perceive member participation among the cooperatives?	Open
Cooperative Structure (Board of Directors)	What is the structure of the cooperative?	Open
	How many members are in the board of directors?	Open
	How are those members elected?	Open
	How long is the tenure for the members and the directive?	Open
	what is the role of the Board of Directors?	Open

	Which mechanisms do the members have to communicate their concerns with the Board and management?	Open
Cooperative Structure (Surveillance Committee)	How many members are in the surveillance committee?	Open
	How are those members elected?	Open
	How long is the tenure for the members and the directive?	Open
	What is the role of the surveillance committee?	Open
Management Structure	How is the management team organised?	Open
	What is the tenure for the managers?	Open
	What is the composition of the management team in terms of presence of members?	Open
	What is the role of the management team?	Open
	What are the main challenges regarding coordination with the management team and the board?	Open
Strategic and Operative Planning	Is there a strategic plan for the cooperative?	Open
	If yes, what are the main objectives of this plan?	Open
	If no, why not?	Open
	Does the cooperative have an operative yearly plan?	Open
	If yes, what are the main objectives of this plan?	Open
	If no, why not?	Open
Production and Processing	What are the products that the cooperative members supply to the central cooperative?	Open
	Does the cooperative establish the production levels by the cooperatives in advance?	Open
	How are those production levels decided? Does the central cooperative sign contracts with the cooperatives?	Open
	How does the cooperative deal with variations in the established production levels?	Open
	How does the central cooperative collect the members production?	Open
	What kind of processing does the cooperative make to the products?	Open
	What are the Quality control mechanisms for production?	Open
	Where are the production centres located?	Open
	What is the installed capacity of those processing centres?	Open
	What are the final products that the cooperative generates after processing?	Open
	Is the production of the cooperative growing?	Open
	Do you consider that the current processing facilities will be able to cope with the future production levels of the cooperative?	Open
	Are there any planned expansions?	Open
	What are the main markets for the cooperative's products?	Open

Member Support	Does the Cooperative Central have training or member support programmes?	Open
	What are the conditions of those programmes?	Open
	Are those programmes available for all members?	Open
	What are the results of these programmes	Open
	How are those programmes funded?	Open
	Do they have a specific management team assigned to them?	Open
Financial Structure	What is the structure of shares within the central cooperative	Open
	How are those shares valued?	Open
	What is the duration of shares within the cooperative?	Open
	Are shares related to throughput or size of the cooperative?	Open
	How is the equity structure of the cooperative determined?	Open
	How does the cooperative fund its operations? Is it through capital participation or through debt?	Open
	How would you consider the availability of financial information about the cooperative?	Open
	How would you evaluate the financial performance of the cooperative	Open
	How would you consider the access to capital for the cooperative?	Open
	How would you consider the access to credit for the cooperative?	Open
Institutions	Do you have support from an NGO currently or in the past?	Open
	If yes, what kind of support do you receive?	Open
	If no, why is that?	Open
	Do you have support from the government currently or in the past?	Open
	If yes, what kind of support do you receive?	Open
	If no, why is that?	Open
	How important would you say the support is for the cooperative?	Open
Legislation	What is your opinion about the change in cooperative legislation in 2013?	Open
	How did the change in legislation affected the cooperative's structure?	Open
	Has the cooperative fully complied with the requirements of the new cooperative law?	Open
Economic Role of Cooperative	How do you perceive the role of the cooperative in the local economy?	Open
	Do you think the cooperative has an economic function within the communities it works?	Open
Successfulness of Cooperative	Do you consider the cooperative is successful?	Open
	Do you consider the cooperative is accomplishing its objectives?	Open

	How do you see the "health" of the cooperative? Or how do you see the growth of the cooperative?	Open
	What are the ways of calculating the performance chosen by the cooperative?	Open
	How do you see the cooperative in the next 5 or 10 years?	Open
	What are the main challenges the cooperative faces for its future development?	Open

Questionnaire for Members of the Cooperative

Category	**Question**	**Type of Question**
Background	Name	Open
	Sex	Range
	Age	Range
	Level of education	Range
	Land ownership	Open
	Type of production	
	Name of Cooperative	Open
	Time working with cooperative	Range
	Position in the cooperative	Range
	Tenure in the position	Range
	Number of founding members in Cooperative	Open
	Current number of members	Open
	Date of Foundation	Open
Foundation	Are you a founder of the Cooperative?	Range
	If Yes: Why did you establish the cooperative?	Open
	If No: Why did you decide to join the cooperative?	Open
	What were the main challenges when founding the cooperative?	Open
	Challenges relating Management, governance, finance, member involvement, institutions, or legislation	Topic
	How have those challenges evolved with the cooperative?	Open
	Challenges relating Management, governance, finance, member involvement, institutions, or legislation	Topic
Membership Process	How do you perceive the process of becoming a member of the cooperative?	Open
	How difficult would you say it is top become a member of the cooperative?	Likert
	Have you received any form of support during the process of becoming a member of the cooperative?	Open
	Were there members of the cooperative that help to incentivise new members into the cooperative?	Open
	What kind of relationship do you have with the other members of the cooperative?	Open

Cooperative Structure (Board of Directors)	What is the internal structure of the cooperative?	Open
	How many members are in the board of directors?	Open
	How are those members elected?	Open
	How long is the tenure for the members and the directive?	Open
	what is the role of the Board of Directors?	Open
	Which mechanisms do the members have to communicate their concerns with the Board and management?	Open
Cooperative Structure (Surveillance Committee)	How many members are in the surveillance committee?	Open
	How are those members elected?	Open
	How long is the tenure for the members and the directive?	Open
	What is the role of the surveillance committee?	Open
Management Structure	Do you have a dedicated management team?	Open
	How is the management team organised?	Open
	What is the tenure for the managers?	Open
	What is the composition of the management team in terms of presence of members?	Open
	What is the role of the management team?	Open
	What are the main challenges regarding coordination with the management team and the board?	Open
Strategic and Operative Planning	Is there a strategic plan for the cooperative?	Open
	If yes, what are the main objectives of this plan?	Open
	If no, why not?	Open
	Does the cooperative have an operative yearly plan?	Open
	If yes, what are the main objectives of this plan?	Open
	If no, why not?	Open
Relationship with Cooperative Central	How do you perceive the relationship between your cooperative and the central cooperative?	Open
	Do you consider that the central cooperative responds adequately to the need of the cooperative?	Open
	How do you consider the benefits of being part of the central cooperative?	Open
	Does the cooperative establish the production levels to be sent to the central in advance?	Open
	How are those production levels decided? Does the cooperative sign contracts with the central cooperative?	Open
	How does the cooperative deal with variations in the established production levels?	Open
	How does the central cooperative collect the members production?	Open
	How would you rate the working relationship with the central cooperative?	Likert

Member Support Programmes	Does the cooperative have training or member support programmes?	Open
	Are there any programmes different to the ones established by the central cooperative?	Open
	What are the conditions of those programmes?	Open
	Are those programmes available for all members?	Open
	What are the results of these programmes	Open
	How are those programmes funded?	Open
	Do they have a specific management team assigned to them?	Open
	How would you rate the importance of those member support programmes?	Likert
Structure of shares	What is the structure of shares within the central cooperative	Open
	How are those shares valued?	Open
	What is the duration of shares within the cooperative?	Open
	Are shares related to throughput or size of the cooperative?	Open
	How is ownership of the central cooperative organised?	Open
	How would you rate the sense of ownership of the central cooperative by the cooperative?	Likert
Financial Structure	Do you have financial records independent to those of the central cooperative?	Open
	How would you consider the availability of financial information about the cooperative?	Open
	How would you evaluate the financial performance of the cooperative	Open
	How would you consider the access to capital for the cooperative?	Open
	How would you consider the access to credit for the cooperative?	Open
	How would you consider the financial performance of the cooperative?	Likert
Institutions	Do you have support from an NGO currently or in the past?	Open
	If yes, what kind of support do you receive?	Open
	If no, why is that?	Open
	Do you have support from the government currently or in the past?	Open
	If yes, what kind of support do you receive?	Open
	If no, why is that?	Open
	How important would you say the support is for the cooperative?	Likert
Economic Role of Cooperative	How do you perceive the role of the cooperative in the local economy?	Open
	Do you think the cooperative has an economic function within the communities it works?	Open

Successfulness of Cooperative	Do you consider the cooperative is successful?	Open
	Do you consider the cooperative is accomplishing its objectives?	Open
	How do you see the "health" of the cooperative? Or how do you see the growth of the cooperative?	Open
	What are the ways of calculating the performance chosen by the cooperative?	Open
	How do you see the cooperative in the next 5 or 10 years?	Open
	Do you see yourself as a member of the cooperative in the next 5 or 10 years?	Open
	What are the main challenges the cooperative faces for its future development?	Open

Questionnaire for Management Staff

Category	**Question**	**Type of Question**
Background	Name	Open
	Sex	Range
	Age	Range
	Level of education	Range
	Time working with cooperative	Range
	Are you a member of the cooperative?	Range
	Do you have previous experience working with cooperatives?	Open
	How do you consider different working with cooperatives?	Open
Management Structure	How is the management structure of the cooperative organised?	Open
	Do you consider the structure to be working efficiently?	Open
	Which areas do you consider could be improved in order to generate a more efficient structure?	Open
Communication Channels	What are the main communication channels with the BoD and the rest of the cooperatives?	Open
	What are the main challenges that those communication channels face?	Open
	How would you improve those communication channels?	Open
Financial structure	How do you perceive the financial performance of the cooperative?	Open
	Do you keep records of the central cooperative and the cooperative members? Or only the central cooperative?	Open
	How would you rate the availability of financial information for decision making?	Open
	What is the equity structure of the cooperative?	Open
	Which financial challenges do you consider the cooperative is facing?	Open

Strategic Planning	Does the cooperative have a strategic plan?	Open
	What are the objectives of that strategic plan?	Open
	How was that strategic plan designed and approved?	Open
	What is your opinion on the strategic plan of the cooperative?	Open
Operational planning	Does the cooperative have an annual operative plan?	Open
	What are the conditions of that operative plan?	Open
	How was that operative plan designed and approved?	Open
	What is your opinion on that operative plan?	Open
Production planning	Does the cooperative establish the production levels by the cooperatives in advance?	Open
	How are those production levels decided? Does the central cooperative sign contracts with the cooperatives?	Open
	How does the cooperative deal with variations in the established production levels?	Open
	How does the central cooperative collect the members production?	Open
	What is your opinion of those production level plans?	Open
Processing capabilities	What kind of processing does the cooperative make to the products?	Open
	What are the Quality control mechanisms for production?	Open
	What is the installed capacity of those processing centres?	Open
	What are the final products that the cooperative generates after processing?	Open
	Is the production of the cooperative growing?	Open
	Do you consider that the current processing facilities will be able to cope with the future production levels of the cooperative?	Open
	Are there any planned expansions?	Open
Industry and markets	What are the main markets for the cooperative's products?	Open
	What are the distribution channels that the cooperative use to reach those markets?	Open
	Who are the main companies involved in that process?	Open
	How is the relationship with the clients managed?	Open
	Which are the main competitors for the cooperative?	Open
	How is that industry evolving over time?	Open
	What are the main opportunities for the cooperative?	Open
	What are the main threats for the cooperative?	Open
	How do you see the position of the cooperative in the industry?	Open
	How do you think that position will evolve over time	Open

Questionnaire for Representatives of Institutions

Category	Question	Type of Question
Background	Name	Open
	Sex	Range
	Age	Range
	Level of education	Range
	Name of institution	Open
	Position in the institution	Open
	Tenure in the position	Range
	Time working with cooperatives	Range
	Do you have previous experience working with cooperatives?	Open
	How do you consider different working with cooperatives?	Open
	How do you consider different working with cooperatives?	Open
Cooperative sector	How do you perceive the development of the cooperative movement in Bolivia?	Open
	Which kind of cooperatives do you consider have a greater impact on the Bolivian cooperative sector?	Open
	In your opinion, how important is the role of agricultural cooperatives in the Bolivian context?	Open
	What are the main challenges that cooperatives face in Bolivia?	Open
	How do you see the future of cooperative development in Bolivia?	Open
Legislation	What is your opinion on the effect of the legislation change in the cooperative sector?	Open
	Which do you consider are the changes that had more impact over the cooperative sector?	Open
	What other topics do you consider should have been introduced in the new legislation?	Open
	How do you see the process of compliance with the new legislation by the cooperatives?	Open
Role of Institutions	What do you consider is the role of institutions in the cooperative sector?	Open
	How important do you consider that role is for cooperative development?	Open
	What are the main limitations to the work of institutions with cooperatives in Bolivia?	Open
Support Programmes	Does your institution provide support to cooperatives in Bolivia?	Open
	What kind of support does your institution provide?	Open
	How are those programmes funded?	Open
	How important do you think those programmes are for the cooperatives?	Open
	What are the main challenges that are tackled by those programmes?	Open

Appendix 3 Information Sheet and Participant Consent Form

INFORMATION SHEET

Researcher Introduction

My name is Ramiro Reinaga and I am a Bolivian student currently working towards completing my studies for the Master of Agribusiness at Massey University in New Zealand. As part of the requirements of the university, I am preparing a Research Project based on analysing the factors that contribute to the successful development of Bolivian Agricultural Cooperatives. This research project is done under the supervision of Professor Elena Garnevska and Professor Nicola Shadbolt from the School of Agriculture and Environment of Massey University.

Project Description and Invitation

Agricultural cooperatives play an important role in Bolivian agriculture economy. However, little has been written about what are the characteristics that determine their success. For this reason, this study aims to study two of the most successful agricultural cooperatives in the country and understand what are the main drivers that helped to their success. Then, the findings obtained from the cooperatives will be compared to the current trends in international cooperative development.

For this reason, we extend this invitation for you to be part of this study. Your help participating in this study is very important and will help to understand better the particular conditions of Bolivian cooperatives and compare their behaviour to the current international cooperative trends.

Participant Identification and Recruitment

The study is based on the elaboration of two case studies on Bolivian agricultural central cooperatives. Each case study is based on one of the most representative agricultural central cooperatives of the country and seeks to understand its structure. Those cooperatives were chosen for the representativeness they have within their industries, their longevity, and the impact on the communities they work with.

In order to achieve a better understanding of the nature of the cooperatives, a series of interviews with members of the directorate, management staff, and members of the first level cooperatives will be conducted. Additionally, available information about the cooperative will be analysed to gain a deeper understanding of the cooperative

Project Procedures

The participants that decide to be part of the project will go through a briefing process to solve all their doubts about the process of the study. Additionally, a copy of this information sheet will be handed, and a consent form will be filled to confirm that the participants understand the conditions of the study and know their rights. After that, the participants will go through a series of questions about the cooperative, their role in it and their perceptions of it. This interview will last approximately an hour and it will be audio recorded, if the participant agrees to it. The objective of this questions is merely to gather information and should not create any conflicts with the participants. However, if the participants chose to do so, a pseudonym will be used instead of their real name

Data Management

The data collected during this study will only be used for the purposes of this research and to no other purpose. The data collected and the recordings will be stored by the researcher in a secure location and encrypted under password. Only the researcher will have access to that information. After a period of five years, this data will be destroyed and no copies of it will be kept by the researcher. If

the participants want to access a summary of the results of the investigation, they must contact the researcher or the supervising team through the contact details presented below.

Participant's Rights

You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- decline to answer any particular question;
- withdraw from the study at any point before the results are presented;
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- be given access to a summary of the project findings when it is concluded;
- ask for the recorder to be turned off at any time during the interview.

Project Contacts

If the participants want to contact the researcher or the supervising team, these are the contact details.

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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 Prof Craig Johnson, Director, Research Ethics, telephone 06 356 9099 x 85271, email humanethics@massey.ac.nz".

PARTICIPANT CONSENT FORM – INDIVIDUAL

I have read or have been read this to me in my mother tongue and understand the Information Sheet attached. I have been explained the details of the study, all the doubts I had were satisfactorily answered, and I understand that I can make additional questions at any moment. I have been given enough time to consider my participation in this study and I understand that my participation is voluntary, and I can leave the study at any point.

1. I Accept / Do not accept that the interview is recorded in audio
2. I Want / Do not want a copy of the recordings
3. I Accept / Do not accept that my real name is used in the study
4. I agree to participate in the study under the conditions established in the Information Sheet

Participant Declaration

I _____ hereby, consent to participate in this study.

Appendix 4 El Ceibo

1. Cooperative History

El Ceibo was founded in 1977 when 12 grass-root cooperatives of the Alto Beni region decided to get together and form a central cooperative. The main objectives behind this union were to obtain better conditions for their cacao commercialisation and production, and to improve the living conditions for the farmers living in the region.

> *Back then, there were three main objectives to the central cooperative: to commercialise cacao, to provide essential food products to the colonies, and to provide technical assistance to members. When referring to commercialisation the main objective was to aim for industrialisation. (Respondent 6, 2020)*

Following the colonisation process of the region in the 1960s, farmers from the highlands of the country moved to Alto Beni to start the development of this new agricultural area. The colonisation programme established by government incentivised 550 families from the highlands and provided them with plots of land, tools, seeds, transportation costs and covered the first 8 months of their alimentation to facilitate the adaptation process to the new colonies (CBF & USAID, 1966).

Upon the establishment of the colony, an early cooperative was formed to tackle the needs of the recently formed colony. The cooperative was made up of the early colonisers but managed by governmental officers. As one of the early members of the cooperatives remembers:

> *"It is a well-known story that there was a cooperative before us called Cooperative Alto Beni. They started working in parallel to the colonisation and it did not work. The colonisers were supposed to automatically become members of the cooperative. This cooperative worked for about three years before it was intervened for mismanagement. Even though the board members were colonisers, apparently all the staff members were employees from the government." (Respondent 6, 2020)*

However, after the intervention and dissolution of that first cooperative, the farmer communities lost their main communication channel with the supply sources for essential items. Additionally, farmers needed to develop commercialisation channels for their production. This developed the creation of grass-root cooperatives in the region focused on meeting the growing needs of each community.

> *"The settlers felt abandoned and that is why they decided to start the cooperative. There were some intermediaries, but they were taking advantage of the producers. The margins the intermediaries had were considerably bigger than the ones that the producers had. After a while, there were 6 or 7 cooperatives that started coordinating among themselves. They began bringing*

essential food products to the communities and then they started commercialising cacao." (Respondent 6, 2020)

The development of these cooperatives set the precedents for the creation of the central. In 1977, the grassroots cooperatives joined together to form El Ceibo with the objectives of improving the access to markets for their members, generating value addition for their throughput, and providing technical assistance to improve the yields of their members' orchards. The major milestones for this process are portrayed in Figure 16.

To achieve its objectives, the central cooperative developed an early transformation process to start the industrialisation of their members' throughput. By 1983, the cooperative introduced semi-processed products, such as cocoa powder and cocoa butter to the domestic market. However, the transformation process was very artisanal and highly dependent on manual labour. To improve this, in 1987 the cooperative implemented its first processing plant in El Alto with a processing capacity of 500 kg per day. El Ceibo expanded its processing capacity with the implementation of a new industrial plant in 1994 with a capacity of processing 2000 kg per day and allowing them to generate their first finished products. Additionally, due to the convenient location of their plant in el alto, El Ceibo decided to build a Commercial Centre and rent the commercial spaces to generate other sources of income. This commercial centre was built in 2000 and the expansion in 2007.

The central cooperative also invested in the improvement of the production of its members. During the colonisation process, the region was deemed apt for cocoa production and a hybridisation process was implemented by the government to mix the native varieties of cacao with higher-yield varieties from Trinidad and Tobago, Peru, and Ecuador. This caused a considerable increase in yields in the region compared to native species. However, to continue this process of improvement in yields, the cooperative created a technical support department focused on providing technical assistance to the members and strengthen the grass-root cooperatives. This department got promoted to an independent division of the central cooperative called the Agro-Ecological Forestry Implementation Programme or PIAF by its Spanish initials in 1993. The next year, PIAF started a process of selection of the hybrid varieties to determine which ones where the ones generating higher yields and develop a seed bank. This programme has grown continually and nowadays provides high-yield seedlings to famers, members, and non-members, across the country.

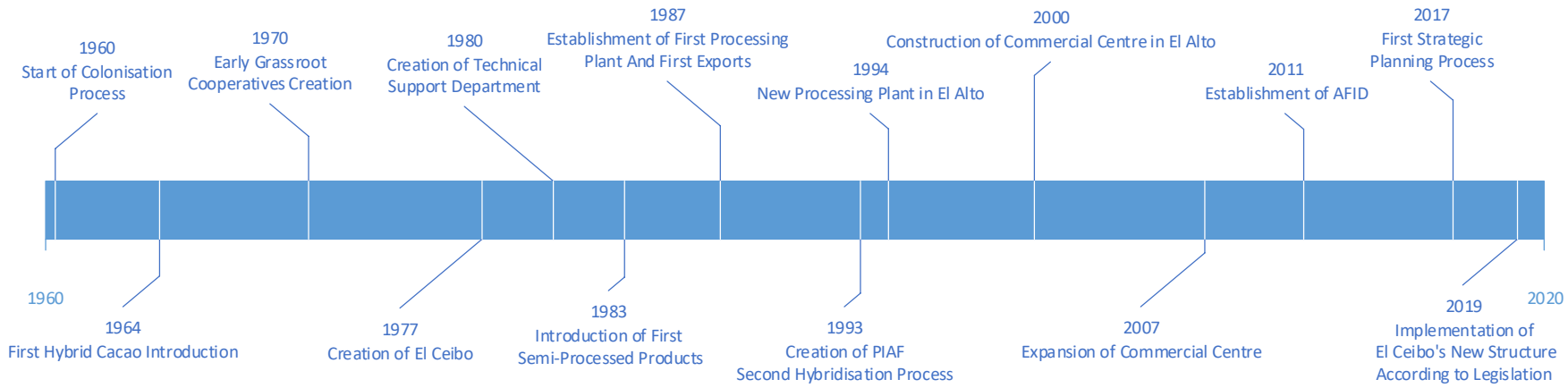

Figure 13 Milestones of El Ceibo History

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The development of the central cooperative and the grass-root cooperatives was helped by the influence of international cooperation agencies working in the area. Most of these institutions were international NGOs that provided valuable support and infrastructure during the establishment process of the cooperative. They provided the early members with capacity building programmes and funding to generate a professional management for the cooperative. The most important organisations that worked with el Ceibo were the Swiss Cooperation Agency (COSUDE) and the German Cooperation (GIZ). They played a fundamental role in the design of the organisational and strategic design of El Ceibo and its philosophy. However, since 2009, El Ceibo does not work or receive support from any kind of organisation, national or international.

> *"Until 2009 approximately El Ceibo received cooperation from institutions. The last ones working with them were ARCO with funding from the US, but that was not exclusive for El Ceibo. The main difference was El Ceibo managed to seize that help from institutions. There are big infrastructures built in the forest that have not been continued on its time and have not worked out." (Respondent 3, 2020)*

A result of this support was the development of the member development initiatives that El Ceibo implemented for the improvement of their member base and the first-level cooperatives. Besides the technical support provided by PIAF, the cooperative developed the education department in charge of managerial-skills training and a financial support department providing credit options for members of the first-level cooperatives. These international cooperation agencies provided technical support during the early years of the central cooperative and also provided funds for members of the management staff to access formal training in management.

Thanks to the help of NGOs and institutions that saw how we worked in the region there was a lot of interest generated in our cooperative. The Swiss Cooperation for example, contacted us and, after we explained our business model, they provided us with technical assistance. They did not provide much in terms of infrastructure, but it was more focused on capacity building. Thanks to that some leaders, and myself included, benefited from the support. (Respondent 6, 2020)

Regarding the financial support initiatives, international cooperation agencies partially provided the funds for the establishment of the Financial Alternative for Development or AFID by its Spanish initials. This department was developed in 2008 and formally started operations in 2011. AFID has a credit portfolio of 14 million Bolivianos, approximately 2 million USD, that was partially funded by the cooperative, with a contribution of close to 2 million bolivianos or 288.000 USD. The remaining funds came from cooperation agencies' funds and the results of their operations.

The total amount they work with is around 14 million Bs. (around 2 million USD). These funds were partially granted by certain institutions and are destined to generate low interest rate loans for our members. As El Ceibo, we provided the starter fund and from there AFID must be self-sufficient and generate its own income. (Respondent 7, 2020)

2. Governance Structure

The central cooperative and the first-level cooperatives have a well-defined governance structure that is based on the formal member-control mechanisms and the members' involvement in the management structure. Additionally, the cooperative has implemented several informal control mechanisms for members to express their views more freely. The interaction between these mechanisms gives El Ceibo a robust and flexible governance structure.

2.1. Formal Governance Structure

The governance structure of El Ceibo was designed and structured according to the specifications established in the Bolivian cooperative law. The legislation establishes three bodies that have the task of controlling the cooperative: The General Member Assembly, the Management Committee, and the Surveillance Committee. And, although there are some differences in the composition of these bodies between the first-level cooperatives and the central cooperative, their principles and functioning is basically the same. These instances are formed by the members and grant mechanisms for exercising formal control rights to the cooperative.

The highest instance of decision making in the cooperative is the General Member Assembly. This body oversees all the strategic decisions made in the cooperative. This assembly approves the budget for the cooperative's annual operations, determines the annual operational plan for the activities of

the cooperative, analyses the performance of the cooperative and the indicators, approves expansion projects, elects representatives for the board positions, appoints strategic management staff, and oversees the design and implementation of the strategic planning. The General Assembly, in first-level cooperatives, is made by all the members of the cooperative, and for the second-level cooperative assembly, each cooperative must send 3 representatives between men and women. El Ceibo's general assembly assigns one vote per first-level cooperative.

> *Each cooperative sends their representatives, their president of the management committee or the president of the surveillance committee. They send 3 representative and they can be men or women. Each cooperative is entitled for one vote, regardless of their size. If there are 47 cooperatives there must be 47 votes. (Respondent 2, 2020)*

The second body in charge of the cooperative operational control is the Management Committee. This committee is appointed by the General Assembly and has a tenure of 5 years with the possibility of an extra continuous term. The Management Committee is made by 5 members with a president, a vice president, a secretary, a treasurer, and a board member. The main function of this committee is to oversee the execution of the plans approved by the general assembly. The Management Committee acts as an operational representative of the assembly and can authorise investments and expenditures of up to 70,000 USD. They work in constant coordination with the management staff to align the objectives of the cooperative with the rest of the organisation. In the case of the central cooperative, the members of the Management Committee are distributed between the offices in El Alto and the ones in Alto Beni.

The final body in charge of auditing of the cooperative is the Surveillance Committee. This Committee is made of 3 members distributed as President, Vice-President, and Secretary. The tenure for these positions is the same as of the members of the Management Committee. They are charged with the task of overseeing and auditing the activities of the cooperative. They control the way the Management Committee and the Management staff implement the plans and looks after the interests of the members. However, despite it being a position that requires knowledge of accountancy and financial analysis to audit the activities effectively, the members assigned to these positions usually have no formal training in accountancy. This is one of the main shortfalls of the cooperative because the only members volunteering to do it are elderly members. This limits the effectiveness of this control mechanism. However, El Ceibo is working towards improving its minimum requirements for members applying for this position to improve the situation and incentivising younger members to apply.

2.2. Management Structure

The management structure of El Ceibo is designed to execute and control the operation of the cooperative and its different departments. The cooperative has a centralised structure to oversee its three main departments. The first of these departments is the agroindustry in charge of the collection, processing, and commercialisation of the members' throughput. Additionally, this department handles the financial information, quality control, and the shopping centre the cooperative installed at its main office in El Alto. The other two departments manage the member development initiatives related to technical assistance, the Agro-Ecological Forestry Implementation Programme or PIAF by its Spanish initials, and credit alternatives for the members, the Financial Alternative for Development or AFID by its Spanish initials. Figure 17 shows the organisation chart of the cooperative.

One of the principles behind the structure of the management staff of the cooperative is that members must be actively involved in it to ensure its correct functioning. This principle is heavily ingrained in the cooperative's mindset, as reflected by a unanimous response by all the interviewees in the cooperative. Because of this, most of the staff in the management and operational staff are members or sons of members. This is especially true for strategic positions where all the positions, except for the director of the Technical Assistance division, are members of the cooperative.

> *It is our capacity of Self-determination that allows the members and their relatives to manage the economic resources of El Ceibo and be part of the operative part of the organisation. (Respondent 1, 2020)*

The cooperative has a series of policies to determine who is eligible for occupying the positions in the staff. To be eligible, the members must have all their obligations with the cooperative in order, in terms of throughput and financial obligations, for a minimum of 5 years. This is the same waiting time established for applying to positions in the board. Each member is entitled to a position in the cooperative, whether for the member or an immediate relative. However, to maintain the position, the members must maintain their levels of throughput above the minimum requirements. For this reason, the staff position can be occupied by an immediate relative while the member continues the agricultural production, or the members delegate the production to their family members.

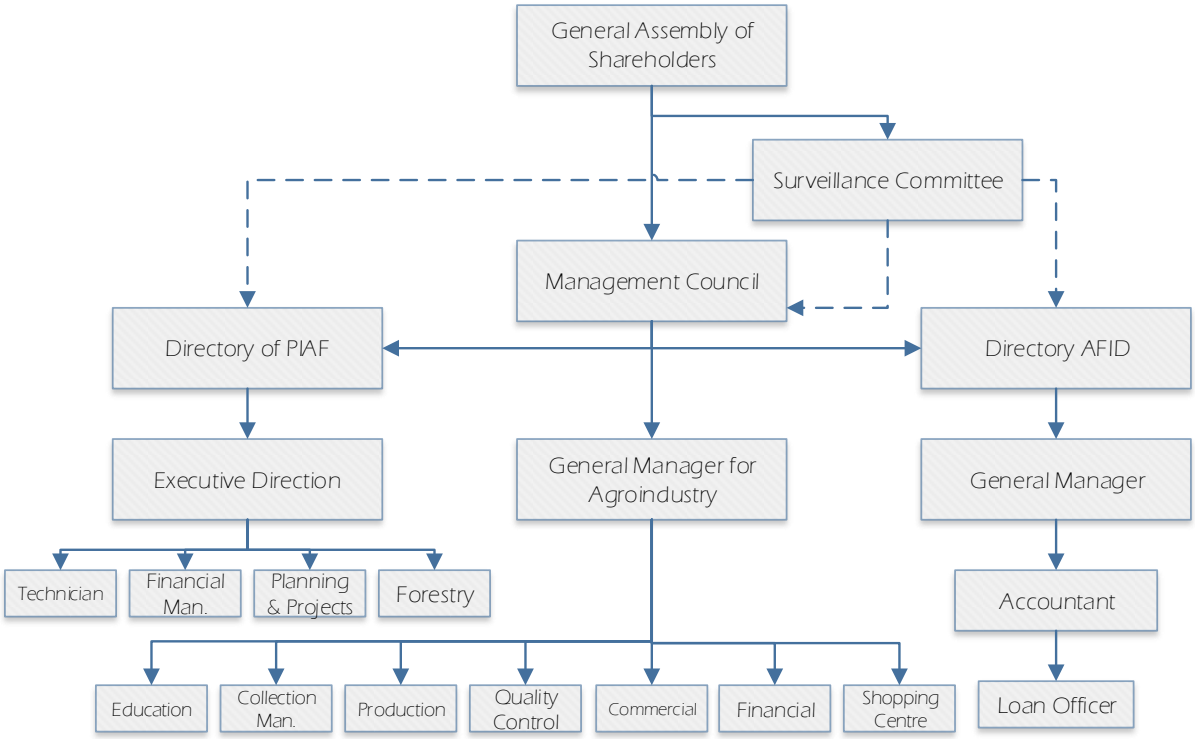


Figure 14 Organisation Chart El Ceibo.

Depending on the characteristics of the position to be defined, the central cooperative has structured procedures to appoint the adequate person in the position. In order to hire new personnel, the cooperative launches an internal call for applicants within the cooperative. If there are not enough applicants or the applicants do not fulfil the requisites for the position, then a second internal call is launched among the members. If that second call is also unsuccessful, then a third call is launched that includes external applicants. Apart from the pre-requisites demanded by the cooperative, the applicants must also go through an evaluation to measure their aptitudes for the applications are reviewed by a commission made by human resources staff, representatives of the management staff, the management committee, and, in the case of strategic positions, an external evaluator. This ensures the competence of the applicants for the roles they perform in the cooperative.

The positions have a limited tenure to incentivise rotation between the members. Each position has a tenure of 5 years. After the 5 years, the member in the position, with the possibility of a second tenure of 5 years if the member has a positive performance evaluation. After that period, the member must take a break of 3 years from working as a staff member to return to the agricultural work. Previously, the limit for the tenure of staff positions was 3 years. However, the cooperative decided to increase it to 5 years to avoid high levels of rotation, especially in strategic positions, while still maintaining the possibility of other members to participate as part of the staff. However, these restrictions are not always well received by members that would rather an unrestricted tenure.

"Some members want to remain in the same position until retirement, they do not want to go back to their cols. So, once their tenure finishes, they leave with some resentment. They want to continue, but our policies establish that they must rest for at least 3 years before applying again." (Respondent 2, 2020)

2.3. Characteristics of Management Staff

Because a majority of El Ceibo's staff are members of the first-level cooperatives, the changes in the characteristics of El Ceibo's member base are also reflected in the structure of their management staff. Currently, most members involved in the management of the cooperative have some form of formal training or a university degree. Additionally, because most of the members that work as staff have been involved with the cooperatives since young ages, the staff has both academic experience and a high level of understanding of El Ceibo's cooperative structure.

"When I was the CEO, I did not know that the productive system was very broad, and our management capacity was not adequate. That is one of our main challenges, we want to develop a higher specialisation level from our staff members." (Respondent 6, 2020)

Another important factor that determines the application of this policy is that salary expectations of external applicants tend to be higher than members. Member participation has allowed the average salaries offered by the cooperative to be lower than the rest of the industry. There are two main factors that explain this phenomenon. The first one is the fact that members can work as staff and remain members of the cooperative. They receive the benefits from being members and the profits distribution on top of the salary they receive from their position at the cooperative. The helps to offset the difference in the salary. In the cases where the sons or daughters of the member opt for the position, this income represent the first stage towards their financial independence and represents a secure job opportunity. The other main factor that influences this behaviour is the cultural background that influences the attitude of the members towards occupying a position in the cooperative. As mentioned before, members view their participation as staff as a service they provide to the cooperative.

3. Activities of the Cooperative

El Ceibo's main activities related to the support of their members' production and the processing of throughput refer to three main areas: the production support area that ensures farmers continue to improve their yields, the post-harvest procedures, and the processing that generates value-addition to the throughput of the members. These three areas depend of different areas of the cooperative, the former depends on PIAF whereas the latter two depends on the Agroindustry department.

The production support area focuses on helping the farmers improve their crops to increase their yields. The activities of this area are in charge of the technicians and staff members of PIAF. This area that provides with technical support to the members and do research to improve the quality of the plants provided to the members. Additionally, because the cooperative focuses on organic production, the cooperative provides support for the certification process.

> *"We mostly focus on organic production. We do the whole organic certification process. We have implemented the Internal Control System, or SIC (according to its Spanish initials), for this purpose. (...) The cost for organic certification is very low for members. This is because we do the certification process as an organisation, not for every individual. That is why we established the SIC, and the 7 technicians provide support, technical assistance, and a follow up of the activities that were established on the production plan." (Respondent 3, 2020)*

Another important part of the of the cooperative's operational management is the post-harvest management. After being harvested, cacao beans must go through a fermentation and drying process before they can be move further down the processing chain. This process is essential to ensure a high quality in raw materials for its further processing and to avoid spoilage. However, due to the lack of machinery, this process relies heavily on warm weather to work. El Ceibo has been struggling with this fermentation process because of the variability of climate conditions the region has experienced over the recent years. Because of this, more members are opting for delivering the beans "wet", or "baba" as the cooperative refers to it, to lower their risk of losses despite the lower price paid for this kind of production. However, the capacity of El Ceibo's fermentation facilities is very limited and does not allow them to cope with high levels of throughput. This is one of the main limitations to El Ceibo's current processing system.

Finally, after transporting the throughput to the plant in El Alto, the processing part of EL Ceibo's production chain takes place. El Ceibo's processing plant has the capability of producing 900 tonnes of finished products per year. El Ceibo sells its products at different stages of transformation according to the demands of their clients. Nevertheless, El Ceibo takes pride in being the only company in the Bolivian chocolate industry that can produce a finished chocolate bar from their own cacao beans. El Ceibo's processing plant produces a wide array of value-added products such as: cocoa powder, cocoa butter, cocoa liquor, chocolate products, and high-quality chocolate bars. However, some of the machinery used in the processing plant dates from the 90's and has a limited processing capacity. That is why El Ceibo is projecting an expansion and renovation of this plant to cope with the increase in demand.

"Our main challenge is to increase our processing capacity. We have a medium-term project to increase our processing capacity with the new plant for internal and external markets. We must continue improving the quality of our raw materials." (Respondent 6, 2020)

Quality control is essential for maintaining the high standards in the products that El Ceibo commercialises in domestic and international markets. For this reason, constant quality checks are implemented throughout the process. Representatives of the agroindustry check the throughput ensuring the quality parameters are within the limits established by the cooperative. Additionally, external controls are performed to grant the organic certification for the production by specialized certifying companies. El Ceibo has ISO 9001 and ISO 22000 certifications for the quality control mechanisms at its processing plants.

3.1. Markets and Products

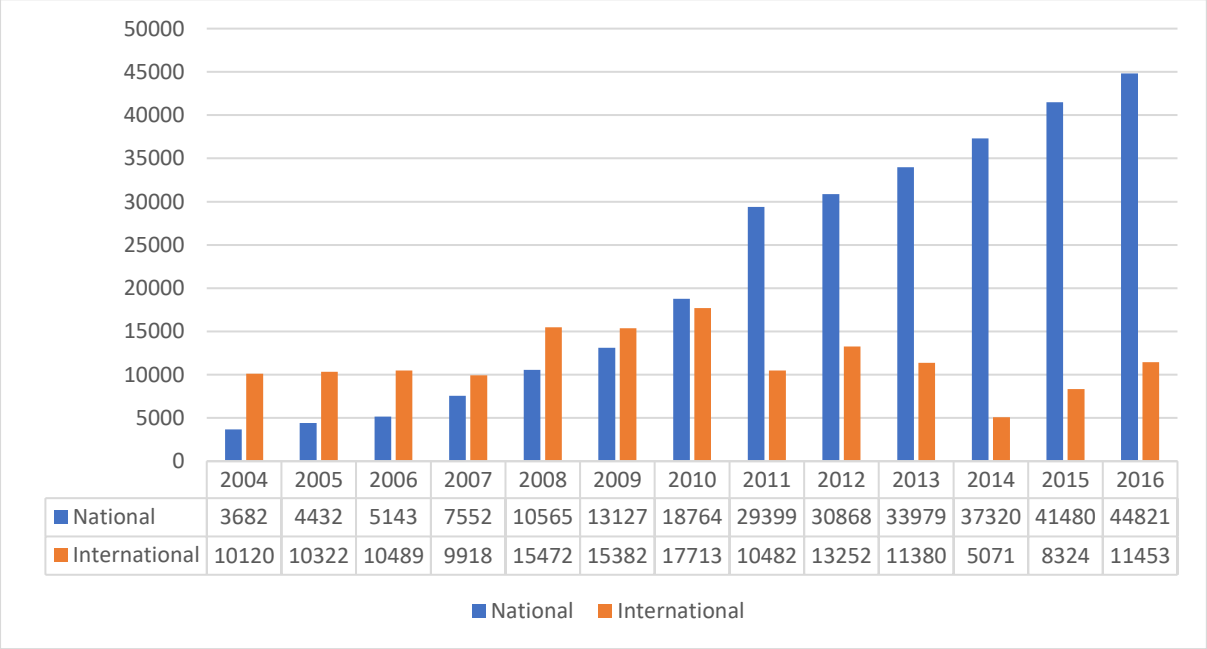
El Ceibo has a wide array of products that are sold in domestic and international markets such as, dried cacao beans, cocoa powder, cocoa butter, cocoa liquor, chocolate-based confections, and a wide array of chocolate bars. The cooperative has developed a brand positioning in each of these markets based on high-quality organic products sourced from their own members. Each market demands a different kind of products with domestic markets preferring more finished products while international markets tend to prefer raw materials or semi-processed products.

El Ceibo has a wide number of clients overseas for its production. The cooperative's main market is focused on European countries like Germany, Switzerland, and France, as well as the US, Japan, and Chile. Originally, these markets represented close to 70% of El Ceibo's sales. However, the volatility and low profitability of these markets made El Ceibo's objectives of maintaining higher prices for its members throughput hard to accomplish. For this reason, from 2010 on, El Ceibo started to shift the importance of this markets and favour domestic ones instead. Traditionally, the demand of these markets was focused on high quality organic-certified cacao beans for their own processing. However, one of El Ceibo's policies is to reduce the amount of raw material sold and replace them with semi-processed products that have higher profitability compared to commodities. However, despite the success with the introduction of semi-processed products, El Ceibo has remained unable to open substantial international markets for their higher value products. The cooperative currently sells between 15 to 30 tonnes of organic chocolate bars to Chile, the US, and Japan, but they are looking to improve their conditions for exporting finished products with their new expansion project.

Over the last decade, El Ceibo has invested heavily in developing their position in the Bolivian chocolate market. El Ceibo's range of products for this market is based on finished products such as

chocolate-based confections, chocolate bars and other sub-products like drinking cocoa powder. Annex X shows the catalogue for El Ceibo's products available in the country. El Ceibo managed to increase their presence in this market considerably to the point where this is the most important source of income for the cooperative. Figure 19 shows the evolution of the contribution of each market to El Ceibo's sales. These products tend to have less volatility and higher profit margins than commodities, thus generating higher and more stable returns for the cooperative. This helps El Ceibo to maintain a stable high price for their members' throughput. The commercialisation of the cooperative's products on the Bolivian market is done through two main channels, the cooperative's own retail stores and through wholesale clients.

> *"We have our own (distribution) agencies in three departments. Three of them are in La Paz, one in Oruro, and one in Cochabamba. With those agencies we can reach 18% of the products destined for national markets. And through our wholesale clients that move around 82% of our production of chocolate." (Respondent 1, 2020)*



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
National	3682	4432	5143	7552	10565	13127	18764	29399	30868	33979	37320	41480	44821
International	10120	10322	10489	9918	15472	15382	17713	10482	13252	11380	5071	8324	11453

Figure 15 Sales by Market (Expressed in Thousands of BOB). Data from Condori (2017)

Most of the sales made by El Ceibo are done in cash. The cooperative has a policy against extending credit to wholesale clients, except for certain supermarkets that require credit contracts for their supply. Wholesale clients must make contracts with the cooperative and make monthly or fortnightly orders to the cooperative which, along with historic data on previous orders, provides the cooperative with essential information for programming their production and logistics. Additionally, the cooperative has retail agencies that allow the cooperative to have a direct relationship with final consumers and casual wholesale buyers.

Besides the income generated by the sale of their production El Ceibo also generates revenue from the renting of commercial spaces in their commercial centre. This commercial centre is located next to the industrial processing plant in one of the busiest zones of the city of El Alto. According to the data of the projected financial flows in the strategic planning of the cooperative, in 2017 the revenue generated by the commercial centre represented close to 13% of the total revenue of the cooperative. However, in terms of their contribution to El Ceibo's profit, the commercial centre represented close to half of the profits generated by the cooperative. Figure 20 shows the composition of revenue and profits for the central cooperative as projected in their strategic plan.

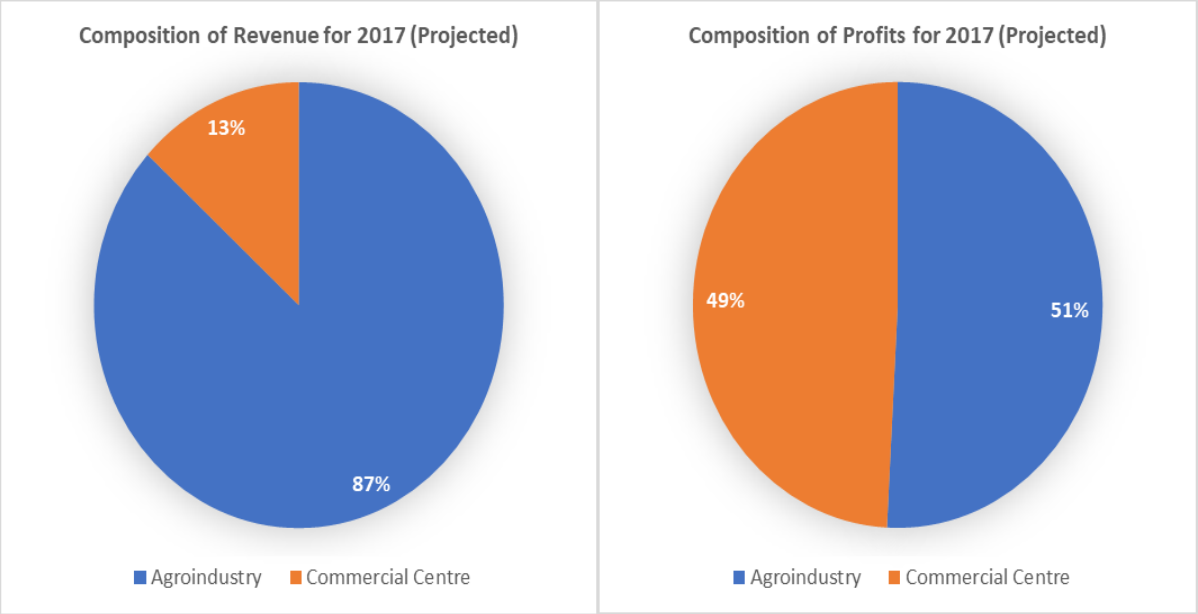


Figure 16 Composition of Revenue and Profits for 2017. Data from El Ceibo (2017)

3.2. Services to the Members

El Ceibo invests a considerable amount of resources into developing and funding initiatives aimed to improve the conditions of their members. These initiatives are managed through three departments with specific tasks: the education department, the technical assistance department (PIAF), and the financial support department (AFID).

The education department is charged with running the skill-training programmes for the members of the cooperatives. This department depends of the agroindustry department of the cooperative and receives its funding exclusively from the cooperative. The skill training programmes offered by the education department are focused on developing essential managerial skills and incentivising access to formal training for its member base. This is done through constant workshops run by the cooperative where members learn the basic skills necessary to have a good performance in their

positions. Additionally, the education department coordinates agreements with other education centres for providing better access for their members.

> *"To generate a more dynamic approach, we have an education department. They are in charge in capacity building in the different topics needed by the organisation. It is not good to say, "I have 40 years and I do not need to learn anything else", it is useful to take courses every once in a while like treasury, accountancy, or leadership are necessary." (Respondent 5, 2020)*

PIAF is the department tasked with providing technical support for members and Research and Development for inputs to increase yields. This department plays an essential role in terms of providing the necessary support to achieve the increase in yields that the cooperative needs to achieve its strategic goals. However, only a portion of the funding for this department comes from the cooperative. PIAF is assigned a budget of 1,000,000 Bs. (145,000 USD) from the cooperative to cover their technician's payroll, but the department must generate revenue to fund their research initiatives. To do so, PIAF commercialises seedlings, germplasm, and other inputs to farmers inside and outside the cooperative.

> *"We also have a seed bank that provides with seeds or seedlings of cacao and other forestry species. We also manage germplasm for cacao, and we do the selection of genetic materials to adapt to different regions and different organoleptic characteristics, resistances, and higher yields." (Respondent 3, 2020)*

Lastly, AFID is the department in charge of managing a credit portfolio for members. This unit was created to provide members with alternative credit sources. Currently, AFID has a portfolio of 14 million Bs. (around 2 million USD) that was provided partially by the cooperative and from donations from international NGOs. The objective of this department was to offset the lack of financial entities in the communities and provide credit alternatives with competitive interest rates. However, with the introduction of banks and other sources of funding, the relevance of this credit programme is being debated. Nevertheless, this programme does not receive funding for its operations from the cooperative because it is a self-sustainable unit.

> *"Even though now the interest rate of AFID is almost the same as other financial institutions, in the past there was a big difference. The interest rate for these kinds of credits was around 24% to 36% each year. when we created AFID we gave credits at 18% of interest rate, that is why we named it Financial Alternative. Nowadays, thanks to the policies regarding productive credits of the previous government, the interest rate has dropped considerably to 6%." (Respondent 6, 2020)*

4. Membership Structure

El Ceibo is a central cooperative, also known as a second-level cooperative according to the structure created by the new cooperative legislation in the country, see Chapter 2 for more details on this structure. As established by the current legislation, the central cooperative allows farmers to combine the production of each grass-root cooperative, or first-level cooperative, and coordinate their efforts to develop economies of scale in terms of processing and commercialisation. This aggregation, however, does not imply a merge among the first-level cooperatives. The ownership of the central cooperative is equally distributed among the first-level cooperatives, this includes the formal and residual rights. However, these cooperatives maintain independence in terms of their assets, management and governance structures, and membership conditions. This means that farmers affiliate to these first-level cooperatives and then they are automatically affiliated to the next levels of aggregation of the cooperative structure.

El Ceibo is made of 47 cooperatives and includes close to 1,200 families. These cooperatives are distributed among the different farmer communities in the Alto Beni region. Some of these cooperatives are older than the central cooperative having existed for close to 50 years.

An important factor that characterises El Ceibo's member base is that it includes the member's close family circle as well. Most members include their families in the production process for cacao and with other activities relating to the cooperative. These activities are related to the capacity building programmes established by El Ceibo and with working in the central cooperative as part of the staff. In time, the sons and daughters of the members also become members on their own when they grow independent of their parents. This created a generational differentiation among the members structure.

> *"Also, regarding the older members, some of them are transferring their shares to their sons. Those members remain as Advisor Members and continue to receive certain benefits like the Ceibo bonus or health bonus. It is not that we forget about them the moment they transfer their shares in the cooperative. For example, if I feel too old to continue, I make a legal document transferring my shares to my daughter and she is the member now, but I still receive benefits." (Respondent 5, 2020)*

Originally, the farmers who moved to the region during the colonisation had very low levels of formal training. However, due to the efforts of the cooperative in providing training to its members and the integration with the main urban centres of the region, such as Caranavi and La Paz, members working within the cooperatives tend to have undergraduate or technical degrees in agriculture related topics.

However, younger people in the cooperative are focusing more in the management and accountancy fields.

> *"In other words, no one wants to be a farmer now. Young people are studying accountancy, or law, and they have the right to do so. But, in the future we will reach a point in which we will not have young members that will produce cacao." (Respondent 3, 2020)*

Because of the characteristics of the colonisation process that took place in Alto Beni, members of the cooperative share a common cultural background. Most of the early colonisers came from the highlands of the country where there is a majoritarian presence of Aymara and Quechua indigenous groups (Linares, 1964). The influence from the practices of these groups can be seen in the structure of the governance mechanisms and the policies regarding rotation of management and staff workers. Additionally, the perception that working for the cooperative and being part of the board of the central cooperative or the first level cooperatives is considered a "service" to the cooperative by the members, has a strong resemblance to communal reciprocity based systems characteristic of the highlands, such as Ayni (Faas, 2017; Wutich et al., 2017). Although it was not explicitly stated in the interviews, the members expressed almost unanimously that the previously mentioned policies regarding rotation and governance were essential to El Ceibo.

4.1. Requisites for Membership

The requisites to accept new members into the cooperative are defined by each first level cooperative. However, those requisites relate to two main elements. The main requisite is that the farmers produce a minimum amount of cacao yearly or to have a minimum amount of land destined to cacao production. In general terms, the cooperatives ask for a minimum of 10 quintals, approximately 460 kg, of cacao or at least 3 hectares dedicated to the production of cacao.

The other main requisite to become a member of the cooperative is to make a monetary contribution to the cooperative in the form of a share. This share holds a nominal value according to the amount established by each first-level cooperative and is extended to perpetuity. The conditions of these shares are defined by the current cooperative legislation. The amount required by each cooperative is determined by the level of infrastructure and the characteristics of each first level cooperative.

> *"Each cooperative is independent. In some of them you must pay 10,000 Bs (1,450 USD) in others 100,000 Bs (14,500 USD). That depends on the level of infrastructure that the cooperative has, especially in terms of collection infrastructure. There are some cooperatives like Litoral that have a big store and a multiple story building, and storage deposits in El Alto with another multi-story building in which every member has a flat. Entering that cooperative costs around 100,000 to*

150,000 Bs (14,500 to 21,800 USD) but you have a wider array of benefits as a member." (Respondent 5,2020)

4.2. Membership Process

The affiliation process to the cooperative is done through the first level cooperatives. After verifying that the applicant complies with all the requisites demanded by the cooperative, the affiliation to the first-level cooperative and the other entities related to the cooperative is done automatically, as established by the current legislation. However, despite this immediate affiliation, the central cooperative establishes that what it takes to be considered full member and being able to apply for a position in the board or become part of the management staff of the central cooperative.

To be considered a full member of the central cooperative, the member must comply with the minimum throughput levels of 10 quintals of cacao per year (46 kg), participate in the assemblies, and complying with all the financial obligations the have with the cooperative. If the members do not comply with these requisites, then their status as full member is suspended. Additionally, to become eligible for a position in the board or as part of the staff, the member must retain the full member status for at least 5 years.

"You must have 5 years minimum as a member of the cooperative (to become a full member). People always look for personal interest. Some people join (the grass-root cooperatives) to work (as a staff member) or to receive benefits. They receive some benefits though. If they produce 10 quintals then they receive the benefits at the end of the year, but they cannot work (as staff) of be part of the board. They must comply with the 5-year minimum to receive the full benefits of being a member of the central cooperative." (Respondent 5, 2020)

4.3. Membership Growth

El Ceibo's membership has grown considerably since its foundation. From the 12 cooperatives that got together to form the cooperative to the current 47 cooperatives working, the growth is considerable. However, this growth process was not only in terms of new cooperatives joining the central, but also in terms of members joining the first-level cooperatives.

"For example, when I started working as a technician in 2010, there were 40 cooperatives members of El Ceibo. Nowadays we are 47 so 7 new cooperatives were formed in that time. Our dream, as El Ceibo, is that one day almost 90% of all farmers in the region will be part of El Ceibo." (Respondent 7, 2020)

The cooperative puts a significant effort in incentivising farmers from the communities where they work to join El Ceibo. By including all the farmers in the technical assistance and capacity building activities performed in the communities, despite being affiliated to the cooperative or not, the cooperative aims to attract non-members by demonstrating the benefits of being part of the cooperative. Additionally, El Ceibo provides support for establishing new cooperatives given its experience in the registration process and relationship with governmental institutions.

> *"Our statutes say that we must collaborate and be part of the communities. The members of the cooperative are also members of the communities but not all members of the communities are members of cooperatives, usually the ones more inclined towards the cooperative values are. We try to incentivise the other member of the communities to one day become part of the cooperatives." (Respondent 7, 2020)*

However, the cooperative faces two deterrent factors that limit the growth of El Ceibo's member base. The first factor refers to the physical limitations on the availability of new farmland in the region. Because Alto Beni is surrounded by national parks in the Amazon region of the country, no new farmlands can be colonised, and the land allocated for the colony has already been assigned to farmers. The other main factor relates to the predisposition of younger people within the community to continue working in the agricultural sector. This is caused by the perception that farm work is a hard-labour work with small pay-out, and younger prospective members prefer studying degrees that allow them to work in an office and/or move to the city.

5. Finance

The central cooperative's activities have grown considerably in size and complexity since its foundation, and that has created the need for a financial information system that can provide useful information for decision making. For this purpose, El Ceibo has developed an integrated system that connects the activities of all the areas of the cooperative and provide information in real time. Additionally, the cooperative has invested in the development of accountants within the member base to improve the record keeping within the first-level cooperatives and the central cooperative.

> *Each cooperative has its own accountant with formal training that is in charge of making the reports, all of this with the support of the education department. If any cooperative is struggling with this or lacks an accountant, they can come to El Ceibo and we provide them with an accountant. (Respondent 7, 2020)*

The integration of the different units of the cooperative and the availability of financial information allows the central cooperative to plan their operational and strategic budgets accordingly. El Ceibo

has 3 main elements that make El Ceibo's financial management are related to the operational budgeting for its activities, the long-term investment management, and the distribution of profit among its member base.

5.1. Operational Budgeting

One of the factors that differentiate El Ceibo from other cooperatives is their self-sufficiency to cover their operational expenses. This funding comes from the capital reserves that El Ceibo has gathered from the retention of profits over the years and the contribution made by members. To achieve this, the central cooperative must have an Annual Operative Plan (AOP) that determines the budgetary needs of the different parts of the cooperative. This plan is designed after the annual objectives established in El Ceibo's strategic plan. This budget assignation is done based on historic information on sales, forecasts of throughput done by the technical assistance department, contracts with international clients, and the cooperative's strategic objectives. The Annual Budget is presented to the general assembly and subjected to approval.

> *"Before planning process of the AOP, they do a final inspection and evaluate the projected yields according to what they can observe. (…) Those projected levels of throughput allow us to determine how much we will process in the plant, how much we will export, and determine what the budget for each operation will be." (Respondent 1, 2020)*

During the revision and approval process of the budget, the cooperative also determines the price to be paid for their members' throughput. At the beginning of the season, the board of the central and management staff set the price to be paid to the members based on the data available from international markets and sales forecasts. This price is evaluated and approved in the cooperative's first assembly of the year and is based on the forecasted throughput for the year. This forecast along with the estimated sales allow prices for the members of the cooperative to be the highest in the region. These prices are set for all the members of the first-level cooperatives and are independent to the level of throughput of the members.

The members sign production contracts in April each year where they agree to send their production to the central cooperative at the price defined by the assembly. Those contracts ensure that all the organic and "conventional" throughput is sent to the cooperative and establishes the quality parameters required of each category. These contracts also allow the members to access payments in advance granted by the central cooperative to cover their operational costs. These payments are assigned based on the size of the first-level cooperative and the members' farms. The amount assigned varies between 1.000 USD to 100.000 USD according to the size of the cooperatives.

However, if the members have more throughput than forecasted, they can ask for a second advanced payment. These advanced payments must be paid by November and they are not subjected to interest rates. In case the members are not able to pay back those payments, the central cooperative deducts the outstanding amounts from the members' profit distribution at the end of the year.

5.2. Distribution of Profits

Although the current Bolivian legislation establishes that all cooperatives are non-profit organisations, El Ceibo consistently generates a surplus from its commercial activities. The revenue generated by its exports, domestic market sales, and by the commercial centre allows El Ceibo to be one of the few agricultural cooperatives in the country that generates enough surplus to be divided among its member base

> *In private companies you work for one or two people while in cooperatives you work for all the members and that is reflected in the returns. At the end of the year, the profits are distributed among all of us. If you provide added value, then you have bigger profits. This is the case of El Ceibo because we have all parts of the cacao value chain. (Respondent 5, 2020)*

El Ceibo distributes this surplus equally among its members at the end of the year. This surplus comprehends the resources generated after the payment of all the cooperative's costs and obligations. However, only a fraction of this surplus is distributed among its members. The cooperative established that 60% of the net surplus remains as retained earnings to the cooperative, whereas the remaining 40% is distributed among the member base. This distribution, following the principles established by the current cooperative legislation, is done equally among the members through the first-level cooperatives. The first-level cooperatives receive their share of the surplus according to the number of members it has. This requires that the information on the number of members is regularly updated. The education department of El Ceibo is tasked with making sure that the cooperatives have their member structure updated constantly. The retention of earnings is destined to increasing the reserve of capital of the cooperative and its capability of funding its operations and expansion projects.

In addition to these programmes the central cooperative also distributes part of the surplus to its members in the form of welfare initiatives. These initiatives include scholarship programmes, bonuses for productivity, health insurance, and a pension for older non-productive members. These payments are an important part of El Ceibo's social efforts towards providing their members with better living conditions. These payments are managed by the education department and are assigned based on the member lists provided by the first-level cooperatives.

5.3. Investment Funding

The other major aspect of financial management in El Ceibo is the budget planning for investments for the cooperative. The investment projects must be presented to the general assembly for approval. One of the most important factors for the cooperative is the profitability over time of the project. This profitability is evaluated based on analysing the benefits that the project will bring to the cooperative and comparing them to the amount required. This ensures that the use of the cooperative equity is done efficiently and generates growth for the cooperative. For example, in March of 2020 the cooperative was analysing the purchase of a new building in Cochabamba valued in over a million dollars destined for a retail point in that city. The president of the management council reflects how the investment analysis process is implemented in the cooperative.

> *"We are using funds from our own reserves (to fund this purchase). But the recovery period for this investment must be within 5 years. The project is being managed by the commercialisation department. It is like an internal loan that must be returned to the cooperative." (Respondent 7, 2020)*

The cooperative funds most of its investment projects with their reserve funds. However, when the project exceeds the funding capacity of the cooperative, El Ceibo has 2 mechanisms to generate the needed resources. The first mechanism used by the cooperative is to raise additional capital from its members. These capitalisation processes are not only reserved for generating funding for expansion projects, but it is also done to update the capital contribution levels by the first-level cooperatives to reflect the evolution of their assets. According to the CEO of El Ceibo, these capitalisation processes are necessary because the cooperative needs to reflect the increase in the resources of the cooperative generated by the retention of earnings and the return of other investments made by the cooperative so that the contributions made by new members reflect the current situation of the cooperative more accurately. However, the periodicity of these capitalisation processes is not established in the cooperative's statutes. The last capitalisation was done almost 10 years ago, but they are only implemented when the cooperative deems them necessary.

The other source of funding for investment projects in the cooperative is the access to credit from external sources. Despite El Ceibo's preference for funding their expansion projects with their own funds, having access to external sources of funding is essential for big expansion projects. The cooperative's asset structure and credit score allow them to access bank loans without many restrictions.

6. Strategic Planning

El Ceibo is one of the few agricultural cooperatives in Bolivia that has a defined strategic plan. This strategic plan is the first long-term plan the cooperative has established. Its scope comprehends the development of the cooperative for 5 years, from 2017 to 2022. This strategic plan contains the main objectives for the cooperative and defines the direction of policies for the cooperative.

The mission and vision of the cooperative defined in this document shows how the cooperative perceives itself and its future. The mission statement is the following:

> *"We are a Cooperative Central leader in the industrial agricultural industry, that seeks to satisfy the main needs of the affiliated first-level cooperatives and farmer families, through the comprehensive and opportune development of products and services, with equality, ethics, transparency, efficacy, efficiency, and reciprocity under the philosophy of the cooperative movement and the care for the environment, with positioning in the national and international markets" (El Ceibo, 2017, p. 5)*

And the vision of the cooperative is the following:

> *"Being a cooperative leader, solid, and competitive with ventures at a national and international level constantly growing to provide the highest value addition to our primary production and promoting integral services for the development of the first-level cooperatives affiliated, with proactive criteria of equity, and economic, social and environmental sustainability" (El Ceibo, 2017, p. 4)*

The strategic plan defines el Ceibo's strategy for that 5-year period as "Investment and Growth". This is reflected into the strategic objectives of the cooperative. These objectives are divided into 4 categories: financial, clients, processes, and training and development. Figure 21 shows how these objectives interact with each other in the strategic plan.

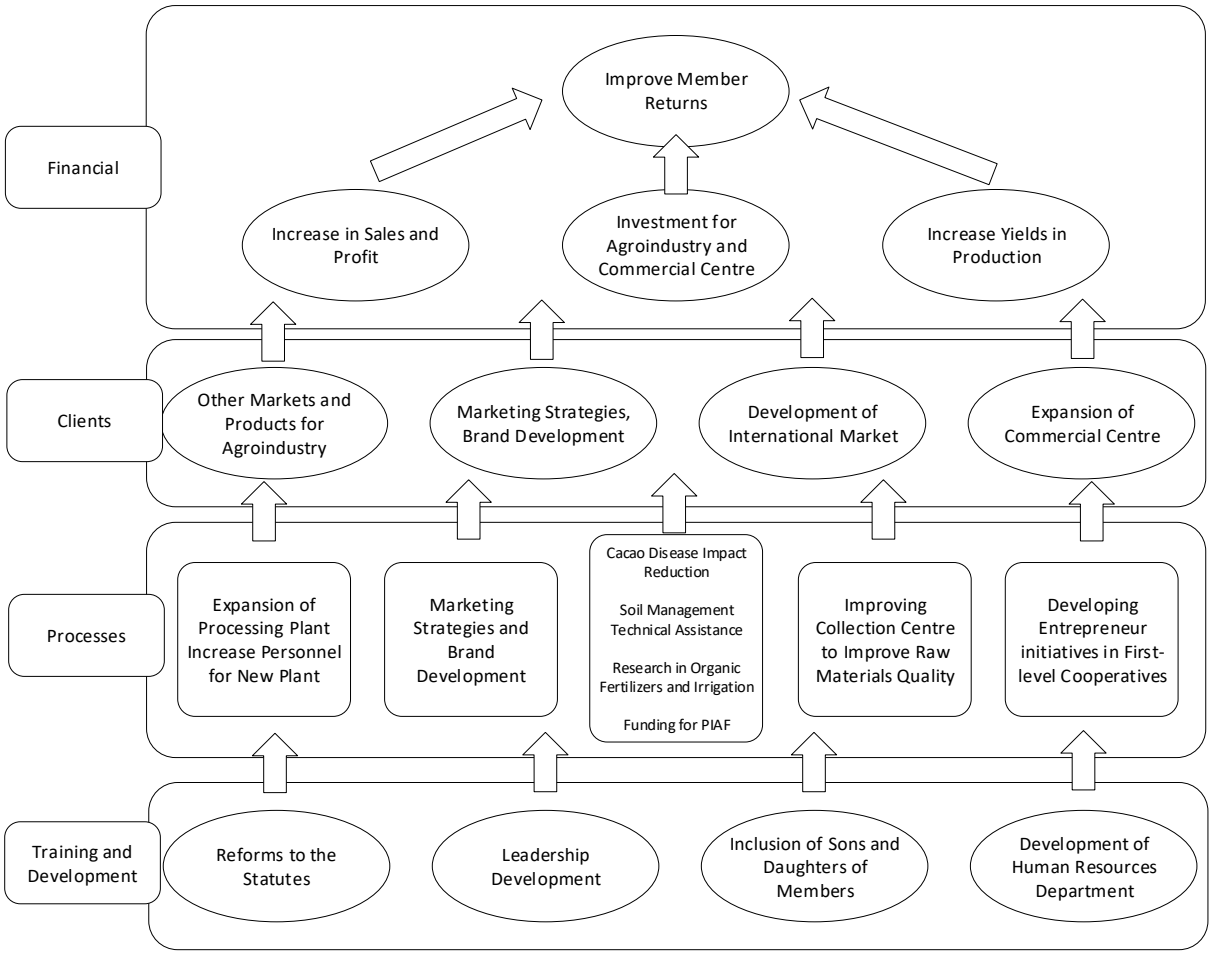
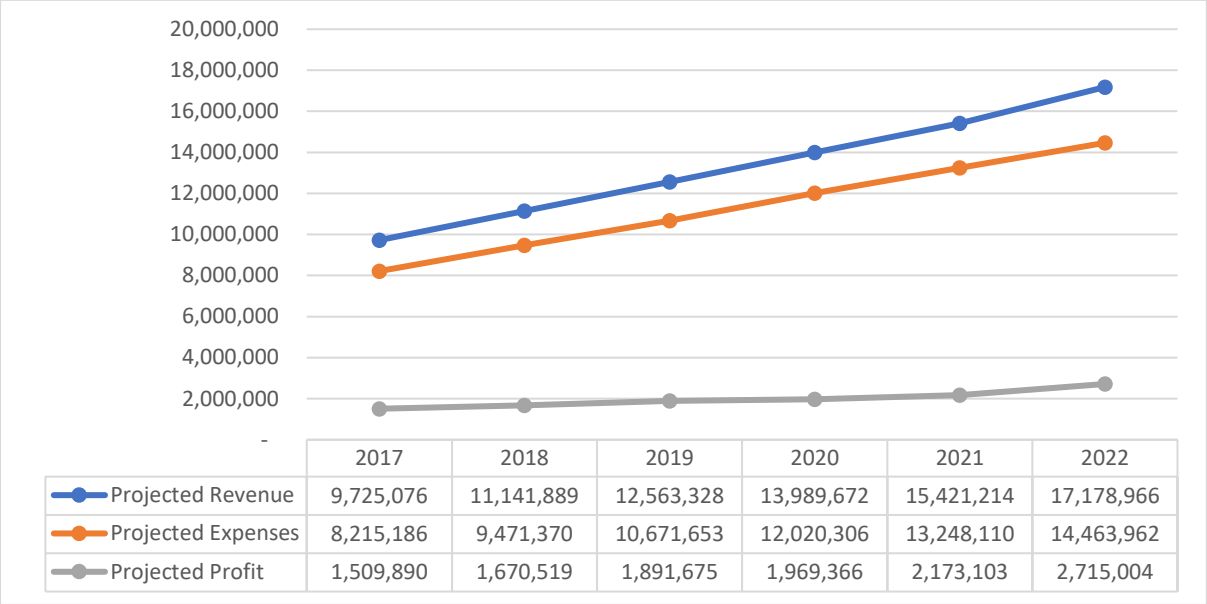


Figure 17 Strategic Plan. Adapted from El Ceibo (2017)

Additionally, as part of this strategic planning process, the central cooperative also determined a set of indicators for each of the groups identified in the plan to measure the progress towards achieving these objectives. The indicators for the financial section of the strategic plan include a projection of the financial flows of the cooperative from 2017 to 2022. Figure 22 shows the projections of revenue, expenses and profit of the cooperative for the mentioned period. The average growth of these figures in this projection is around 12% per year and it assumes that the profit margin will remain approximately stable at 16%. Additionally, the central cooperative has established the objective of increasing the average yields of cacao production from 4 to 12 quintals/ha, 184 to 552 kg/ha. In terms of the client section, the plan establishes that the cooperative must have a presence in the three main cities of the country by 2019 and also invest approximately 1.000.000 Bolivianos, approximately 145,000 USD, yearly for brand development. In terms of processing, the cooperative established a timeframe to start the construction of the new processing plant in 2022 and the funding of several research initiatives to improve organic production. Finally, in terms of Training and development of members, the cooperative puts emphasis in developing leadership, the inclusion of sons and

daughters in the welfare programmes offered by the cooperative, explained earlier, and the development of a Human Resources department.



	2017	2018	2019	2020	2021	2022
Projected Revenue	9,725,076	11,141,889	12,563,328	13,989,672	15,421,214	17,178,966
Projected Expenses	8,215,186	9,471,370	10,671,653	12,020,306	13,248,110	14,463,962
Projected Profit	1,509,890	1,670,519	1,891,675	1,969,366	2,173,103	2,715,004

Figure 18 Projected Flows Expressed in USD. Data from El Ceibo (2017)

The process for designing this strategic plan was done in the span of 4 months from July to October 2017. This process involved representatives of all the first-level cooperatives affiliated to El Ceibo under the guide of representatives of the Association of Ecological Producers Organisation of Bolivia, AOPEB by its Spanish initials. The design process included high levels of interaction between the cooperatives and the management staff. For the design of the objectives and indicators, two methodologic frameworks were used: The Balanced Scorecard and the Farmers Advocacy Consultation Tools (FACTS). The results of the strategic plan and the indicators for its evaluation were approved by the General Assembly in September 2017 and set a precedent in the cooperative.

7. Expansion Projects

The central cooperative is constantly funding expansion projects to improve the conditions of their members or their productive system. Examples of these projects in the cooperative history include the construction of the processing plant in 1994, and the construction and expansion of the commercial centre in 2000 and 2007 respectively. However, the cooperative is constantly funding smaller expansion projects or upgrades to the current infrastructure of the cooperative. The recent purchase of a building for retail purposes in Cochabamba is an example of this.

To comply with their strategic objectives of increasing their throughput and processing levels by 2020, the cooperative has planned the construction of a new processing plant to replace the current one. This is the largest expansion project that the cooperative is working on. This expansion comprehends

the construction of a new processing plant with twice the processing capacity of the current one. According to the project approved by the General Assembly, the budget for infrastructure works is 12 million USD and an extra 8 million USD is destined for the purchase of machinery. The central cooperative has the capacity of funding 30% of this expansion and acquiring a loan for the remaining 70%. The design and feasibility analysis of this project has been completed and the project is expected to begin its implementations by the end of 2020.

We want this new industrial plant to make us a representative of the industry in Bolivia. Also, not only focus our scope to Alto Beni, but to expand our operations to Beni, Pando, and Santa Cruz. We want to develop our image as El Ceibo nationally. (…) We want to increment our presence in the rest of the departments and expand our raw material processing capabilities. (Respondent 7, 2020)

8. Future of the Cooperative

The central cooperative and the first-level cooperatives are working towards meeting the objectives they have set in their strategic planning in 2017. As mentioned before, the cooperative's objectives are focused towards expanding its volume of operations and its scope to a more national level. This focus refers to the levels of throughput and processing, the introduction of new cooperatives from different regions of the country, and the expansion of their presence in the domestic and international markets. Although the cooperative established indicators for the completion of these objectives, there are many variables that can affect the completion of these objectives.

In terms of the planned increase in processing capabilities, the central cooperative has been investing in improving the yields of the members of the first-level cooperatives. The strategic objectives establish that the throughput levels must double by 2022. However, due to external factors like climatic conditions, the levels of throughput over the last years has remained constant at almost 1000 tonnes per year. This is below the expected growth of the cooperative.

Cacao production levels are not stable, it varies according to climate conditions. For example, in 2017 when I started working, our goal was 18,000 qq (828 tonnes) and we managed to collect 22,000 qq (1,012 tonnes). (…) In 2018, they asked for 18,000 qq (828 tonnes) and I collected a bit over 22,000 qq (1,012 tonnes). And in 2019, they told me to collect 22,000 qq again. However, this year we have collected only 17,000 qq (782 tonnes) so far. We establish goals for each cooperative. This goes according to the quality levels and the minimum throughput. (Respondent 5, 2020)

Another factor that could affect this projected growth is the lack of incentives for young possible members. As established before, young people in the farmer communities are opting for studying management or law to find jobs in the city. This affects the renovation process of the cooperative member base in the future. However, El Ceibo is working on developing incentives to attract younger members into the cooperative through the introduction of technology in the production process. However, due to the characteristics of their organic production, this is a complex endeavour.

> *In other words, no one wants to be a farmer now. Young people are studying accountancy, or law, and they have the right to do so. But, in the future we will reach a point in which we will not have young members that will produce cacao. The members will have to generate alternatives for production, decide to close the cooperative, or become just intermediaries. That is the main problem for the future. We are trying to provide young people with different tools. Young people want faster things and the use of technology. We are trying to adapt to that change. (Respondent 3, 2020)*

Nevertheless, the development of the new processing plant is expected to provide the central cooperative with the necessary processing capabilities to generate new product lines to further develop their markets. In terms of the national market, the cooperative management staff is confident that there is still a considerable potential to develop their presence in the different regions of the country. Additionally, with the new processing plant, the cooperative can also increase the amount of semi-processed products such as: cacao powder and cacao butter, to increase their exports of products with value addition.

> *To install the new processing plant. We have purchased some land by Viacha, we have a design already, and the CEO is now in Europe with the President of the Management Committee and Surveillance Committee, the Commercialisation manager, and the Machinery manager looking at the new machinery that we will buy. That will be our greatest challenge in the future. As I told you, the average throughput we have is 20,000 quintals, but in 10 or 15 years we want to double or even triple that number. The challenge is to project our industry to reach those levels (of throughput). (Respondent 5, 2020)*

Appendix 5 CAICO

1. Cooperative History

CAICO was established in 1971 after the three cooperatives established in the Japanese colonies of Okinawa decided to merge into a single entity. The objective of the cooperative was to generate enough support and better conditions for the newly formed colonies. These colonies were formed by Japanese immigrants that came to the region after World War II. These Japanese immigrants were farmers that came as a result of a bilateral agreement between the governments of Bolivia and Japan that provided 50 Ha per family (Linares, 1964). Figure 23 shows a diagram of the evolution of the cooperative and the most important milestones in its development.

Before the creation of the cooperative in Okinawa, the group of 405 people, between farmers and their family members, established a colony in the region of Rio Grande called “Uruma” in 1951. However, this colony and the original cooperative they created in the region was dissolved after a flooding of the river and the effects of an epidemic that killed 15 people and affected most of the colony. In 1955 the group established the first colony in the area to the north of Santa Cruz where they currently remain. This first settlement also came accompanied by the establishment of the first Agricultural Cooperative “Okinawa Colony”.

This first cooperative was focused on providing infrastructure and support to produce rice. For that purpose, the cooperative built their first rice post-harvest processing facilities within the first year of the new cooperative. After that, in 1960, the cooperative was granted additional lands to the south of the original colony and decided to form a second colony with its respective cooperative named Okinawa 2. This increased the number of people and land availability in the communities. Finally, in 1962, the colony received a final grant of fiscal lands from the government and developed the third Okinawa colony and cooperative. The creation of these 3 colonies and their respective cooperatives allowed them to increase their production and look at alternative crops to rice. However, despite the growth, the cooperative’s membership remained exclusive to Japanese immigrants.

> *They were all small producers and had to fill the trucks to transport the products. Also, because of the distance, it took a week to go and sell. That's why the cooperative was formed. It started buying supplies and selling products together. Later we began to provide credit and financing. (Respondent 11, 2020)*

In 1971, the three cooperatives decided to merge into one large cooperative. The main reason behind this merge, was the creation of better negotiation capabilities with clients and improve the logistics of their operation. Additionally, the cooperative worked in introducing different crops that could be

more profitable. As a result, the cooperative and its members introduced cotton upon the establishment of the cooperative in 1971 and built a cotton processing plant within the next year. However, due to bad weather conditions this factory had to be closed in 1981. Since then the cooperative shifted the focus of their production to soya, wheat and corn.

The increase in focus on these crops incentivised the cooperative to continually invest in developing their agro-industrial complex. This complex started with the construction of a processing centre and a series of silos for seed storage in 1987. These facilities underwent a series of expansions and updates to reach their current capacity. Additionally, the processing facilities for Soya allowed them to start their exports to Peru in 1993 and continued to develop it until the introduction of export quotas in 2008.

One of the most important roles of the cooperative during the establishment of the colonies was the support they provided to the colonisers in terms of access to education and health. The cooperative developed a health centre, a school, and other basic infrastructure for the town centre in Okinawa. However, as the cooperative and the colony grew bigger, the management of these social initiatives became too complicated to be handled by the cooperative. For this reason, the cooperative decided to form an independent entity named Bolivian Japanese Association of Okinawa. They took over the task of maintaining these aspects of the development of the town.

Additionally, the cooperative developed other initiatives to further develop the value addition of their production. In 1986, the cooperative developed their first milk storage facilities containing 3 tanks of 2,000 litres. The cooperative invested in the development of a dairy processing plant in 2006. This plant was aimed at increasing the value addition of their dairy production. However, this initiative was dissolved in 2013 when the cooperative did the transition to the requirements of the new legislation. Another initiative the cooperative developed was the construction of a fuel station for their machinery. However, after the transition to the new legislation in 2013, the cooperative decided to close this fuel station. Finally, another of the initiatives that the cooperative developed to increase their value addition was the purchase of a mill and a pasta processing plant to process their wheat production. This plant started working in 2011 and continues to work to date.

> *When all this started, the cooperative had a couple of sheds, a supplier and a few offices. Now it is one of the only agricultural cooperatives in Bolivia. (…) It is a success story in Bolivia. (Respondent 9, 2020)*

The cooperative also took over the administration of the Bolivian Agricultural Technological Centre, or CETABOL for its Spanish initials. This research centre came to existence in 1985, when the

experimental farms of San Juan de Yapacani and Nueva Esperanza, located in the colony Okinawa 2, merged. These experimental farms were formed with the support of the Japanese International Cooperation Agency, JICA. This cooperation agency managed the research centre until 2010 where they transferred the ownership of CETABOL to the integral Agricultural Cooperative San Juan de Yapacani, or CAISY according to its Spanish initials, and CAICO. These two Japanese immigrant cooperatives are two of the largest cooperatives in the country and are both situated within the same region. However, CAISY transferred ownership of CETABOL in 2018 to CAICO.

The last major development of the cooperative relates to the adaption process to the new cooperative legislation introduced in 2013. The cooperative members faced a considerable amount of uncertainty regarding the conditions that this new law would bring for cooperatives. Among the concerns of the members were the possibility of more government intervention and the impossibility of workers to claim ownership of the assets in case of bankruptcy. To protect their investment from this uncertainty, the cooperative decided to separate their operations and form two different companies to take over the value addition parts of the cooperative.

> *A few years ago, the government announced a new cooperative law. In which it stated that the assets of the cooperatives in case of bankruptcy would supposedly pass to the government. Therefore, the need arose to protect the silos and the infrastructure that the cooperative had at that time, and the companies were founded. (Respondent 9, 2020)*

The two companies created during this transition were in charge of the agroindustry facilities, and the flour and pasta processing plant respectively. For the agroindustry complex management, the cooperative established in 2013 “Agroindustria CAICO S.A.” which works under a similar legal figure to a Public Limited Company, or PLC. Conversely, the company that took over the mill and pasta processing plant, Molinera OKI S.R.L., works under a legal figure similar to a Limited Liability Company, or LLC. The details about the management of these two companies and their relationship with the cooperative will be explained in more detail in the next section.

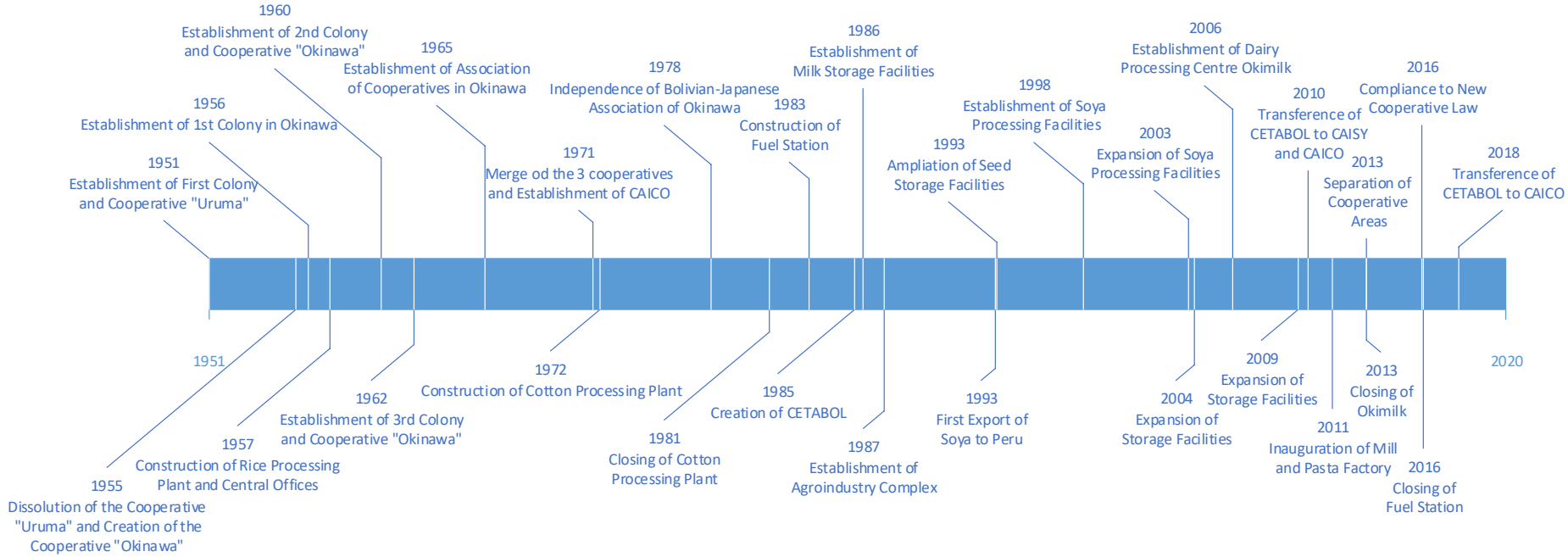


Figure 19 Milestones of CAICO History. Data from CAICO (2019)

2. Governance Structure

The cooperative has a well-defined governance structure that allows them to coordinate their members throughput and their relationship with the two other companies in charge of the transformation process. However, because these new companies are independent in their management, the control mechanisms the members have over them are less direct. This led to the implementation of formal and informal control mechanisms for the members. However, the different structures of the companies allowed the creation of a more efficient decision-making process.

2.1. Formal Governance Structure

The governance structure of CAICO was designed and structured according to the specifications established in the Bolivian cooperative law. The legislation establishes three bodies that have the task of controlling the cooperative: The General Member Assembly, the Management Committee, and the Surveillance Committee. These instances are formed by the members and grant mechanisms for exercising formal control rights to the cooperative. The highest instance of decision making in the cooperative is the General Member Assembly. This body oversees all the strategic decisions made in the cooperative. The assembly is in charge of approving the annual operational budget, determining the operational plan for each campaign, analysing the performance of the cooperative, approving expansion projects, electing representatives for the board positions, appointing strategic management staff, and establishing the member commissions for special tasks that the cooperative assigns. According to Bolivian legislation, the General Assembly must meet a minimum of 3 times for ordinary meetings, but they can call for as many extraordinary meetings as they deem necessary. The assembly is made of all the members of the cooperative. Each member is entitled to one vote regardless of the amount of land tenure or throughput. However, even though all members have the same voting rights, elder members tend to have a higher influence in the decisions made in the assembly. This is due to the cultural background that the cooperative has on its member base and will be discussed in more extent later.

> *In relation to the structure of the cooperative, which consists of; the ordinary general assembly, which is the maximum entity, then there is the surveillance committee and then there is the management and so on. (…) There are 5 members on the administrative board and 3 members on the surveillance committee. (Respondent 11, 2020)*

The second body in charge of the cooperative operational control is the Management Committee. This committee is appointed by the General Assembly and has a tenure of 5 years with the possibility of an

extra continuous term. The Management Committee is made by 5 members with a president, a vice president, a secretary, a treasurer, and a board member. The main function of this committee is to oversee the execution of the operational plans and the purchase of inputs for the cooperative. Additionally, in coordination with the surveillance committee, they analyse the credits that the cooperative grants the members to finance their production. The Management Committee also evaluates the cases of members that want to join or leave the cooperative. The members of the Management Committee distribute their time between the offices of the cooperative in Santa Cruz and the ones in Okinawa.

> *The Board of Directors organizes the purchase of supplies and the sale of products and approves the credits (for the members). These activities are coordinated with the farmers. The directors act as organizers, the one who approves or not are the producers. We as a board of directors have twice a week to plan the credits, purchases and sales. Every year we meet once or twice to inform the producers about the situation and propose different alternatives. We are coordinators within the cooperative. (Respondent 11, 2020)*

The final body in charge of auditing of the cooperative is the Surveillance Committee. This Committee is made of 3 members distributed as President, Vice-President, and Secretary. The tenure for these positions is the same as of the members of the Management Committee. They are charged with the task of overseeing and auditing the activities of the cooperative. Their main concern is to make sure that the financial management of the cooperative and the debt levels of members are sustainable.

2.2. Management Structure

The management structure of CAICO is focused on managing the operative part of the cooperative, coordinate the purchase of inputs for the members, and the commercialisation of the members' throughput. Because the cooperative split its operations into two other companies, the management of the agroindustry facilities and the mill and pasta production plant are independent to the cooperative. However, because of the close relationship that exists between the cooperative and these two entities, it is important to understand how both companies are structured as well.

2.2.1. Management Structure of the Cooperative

The management structure of CAICO is focused on coordinating the agricultural production of their members and providing support for it. For this purpose, the cooperative has a centralised structure that is directly dependant of the Management Committee of the cooperative. The organisational chart is detailed in Figure 24. The management staff of the cooperative is made of 21 employees that coordinate the work with the members.

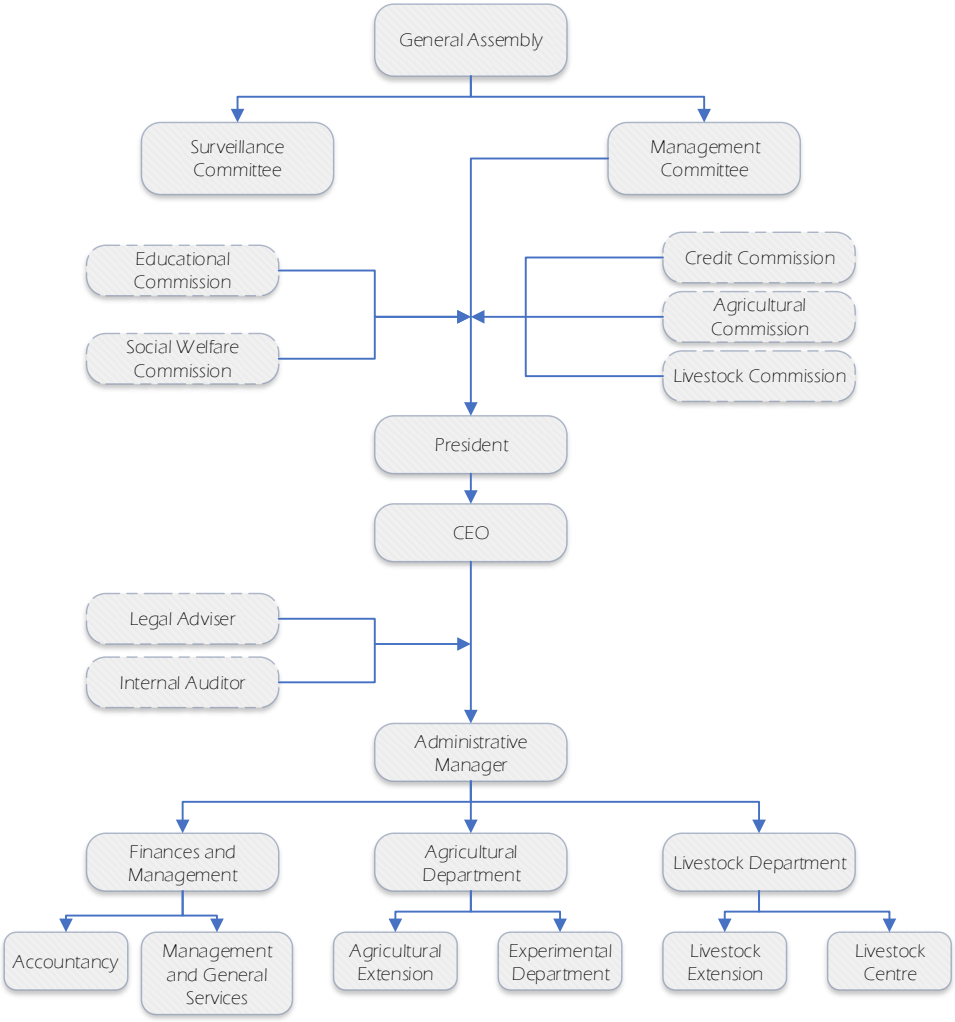


Figure 20 Organisational Chart CAICO. Adapted from CAICO (2019)

The main activities of the cooperative management team are related to providing members with support in their production. An example of this is the task of coordinating the purchase and logistics of the agricultural inputs for the farmers. The cooperative management team negotiates the prices and the quantities with the providers to minimise the cost for members based on their needs. For this purpose, the cooperative performs a survey at the beginning of each campaign to determine the expected levels of throughput from each member. Additionally, the cooperative is in charge of financial management and the review of credits for members. This is done in coordination with the Surveillance Committee and the Management Committee. The cooperative also coordinates the work of the cooperative with other institutions like AFCOOP of ANAPO, National Association of Oilseed and Wheat Producers by its Spanish initials. The cooperative maintains a close relationship with those institutions to benefit from the effects that these organisations have in policy.

The cooperative management staff also contains the technical support areas for farmers. The technical support department is an essential part of the structure of the cooperative's staff. This department is

divided in two groups, one based on crop production support and the other focused on livestock. Each of these divisions has an experimental component and a technician component. The activities performed by the technical support department will be discussed further in a later section. It is worth noting that despite the formal structure of this department in the cooperative, the cooperative is going under a restructuring process. Currently, the staff assigned to this department is only 4 technicians due to this restructuring process and personnel shortages.

2.2.2. Management Structure of the Agroindustry and Milling Companies

When the cooperative decided to separate their operations in 2013, the two companies created to manage their processing plants. These companies were established as independent entities with their own management structures. Additionally, upon the creation of these companies, the cooperative also determined that they should be financially independent from the cooperative and self-sustainable. However, the relationship with the cooperative was maintained through the structure of their boards and the ownership structure.

The ownership of each company is distributed among the members of the cooperative. However, not every member of the cooperative is a shareholder of these companies. This is because, even though only the members can obtain shares in each company, not every member decides to do so. The decision of purchasing shares depends on each member's size and preference.

> *No (I am not a shareholder), becoming a shareholder has a registration fee and considering the extension of my crop, it does not suit me. My father is a shareholder. (Respondent 10, 2020)*

Because of this ownership structure, the board of the companies is the same as the one of CAICO. This allows the members to maintain control over the former assets of the cooperative. however, because these companies are not subjected to the same legislation as cooperatives, the decision-making process is different for the companies. Whereas the cooperative model requires that strategic decisions are made by consulting the members through the general assembly, the corporate structure of these companies allows them to have a more agile system. In these two companies, the strategic decisions are made in coordination with the Board and the management staff.

> *As far as bureaucracy goes, it was better. Now the Co. has more independence to make decisions in a more agile way. More than anything else, that was the biggest effect. Plus, by handling the accounts separately, we can determine costs more individually. Before the division, everything was evaluated together and there was not much clarity in the accounts. (Respondent 9, 2020)*

In terms of each company's staff, both have a defined structure for their operational needs. The Agroindustry Company in charge of the storage and seed processing sectors, has a management staff

of 10 staff-members and 35 workers in the plant. This staff is distributed among the areas of processing, seed storage, weighbridge management, and maintenance. In terms of the mill and pasta processing plant, the number of staff members is only 3 people and the rest are eventual workers that are hired based on the daily needs of the plant. This is because the plant is semi automatized and the work-load variations throughout the year.

2.3. Characteristics of Management Staff

The management staff of the cooperative and the companies that originated from it is directly influenced by the member base and the community of Okinawa. Even though none of the staff members are members of the cooperative, they are either sons of members or part of the community of Japanese descendants in Okinawa. This allows for these staff members to have a deeper knowledge of the cooperative and the effect it has in the community since a very young age. Additionally, it also increases the level of previous relationship of staff members with members of the cooperative.

Another important factor that determines the characteristics of the management staff is their access to formal training. Most of the staff members, especially those in decision making positions, have undergraduate degrees in agricultural related topics or management. This creates a professional management structure with an adequate set of skills for managing the increasing complexities of the cooperative. Additionally, another common factor among the staff members is that most of them start working in the cooperative or the companies as their first job after finishing university. All the staff-members interviewed started working at the cooperative at the beginning of their careers and continue to grow within the organisation.

The participation of members in the management structure of the cooperative is usually done through the commissions that the cooperative establishes for specific tasks. These commissions deal with specific issues that the cooperative faces and are appointed by the General Assembly. Usually, the members are in charge of commissions, like the agricultural or livestock, or other positions like the board of the experimental department. The members usually stay in these positions for a period between 6 to 10 years before they can be part of the board of the cooperative.

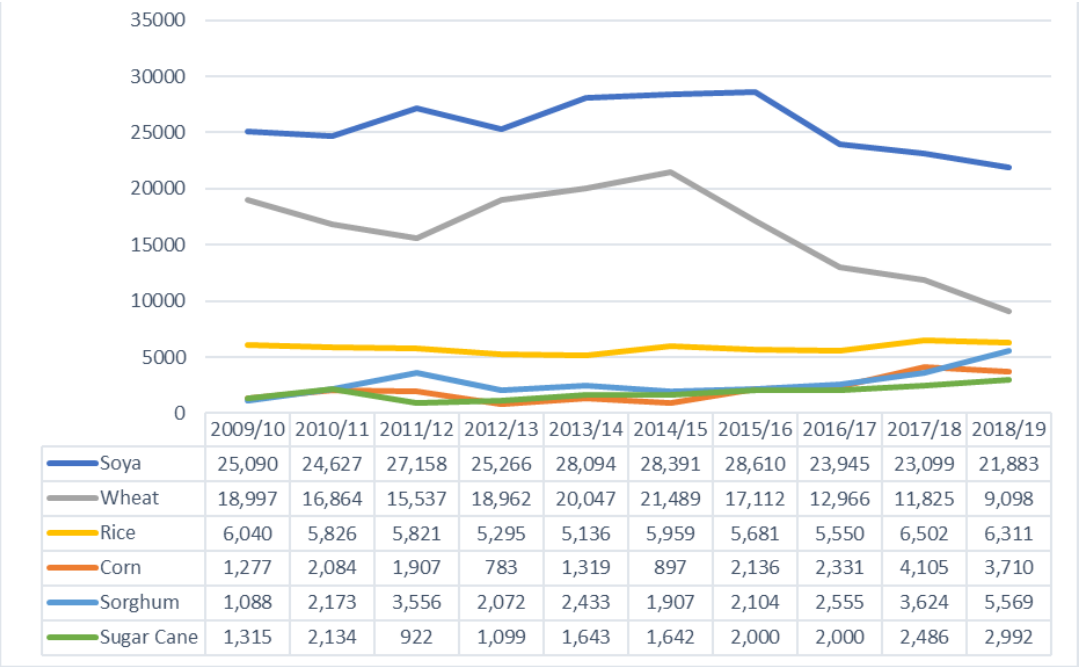
> *In the first two years of membership one cannot be part of the board of directors. However, one can be a commissioner, either in the agricultural commission or in the farming commission. In order to join the board of directors, one must go through a six- or seven-year process, during which time they will prepare themselves. It normally takes about 10 years to gather the necessary experience. This process is not mandatory and there are some who are not interested. Those who*

are interested are those who start by looking to be part of the committees and start their career as soon as possible. (Respondent 11, 2020)

3. Activities of the Cooperative

As a Cooperative, CAICO works with a heterogeneous portfolio of throughput from its members. This throughput can be divided into two main categories according to its characteristics: crop production and livestock production. Within these categories, the members produce a wide variety of crops and livestock. However, in terms of size and infrastructure needs, the throughput generated by the cooperative related to crop production is considerably larger than the production of livestock. For this reason, most of the emphasis in the development of infrastructure and logistics in the cooperative is focused on crop production.

The cooperative members produce a wide array of crops depending on the conditions of their farms. The main crops grown by the members are soya, wheat, corn, rice, sugar cane, and sorghum. From these crops, the most produced ones are soya and wheat. Figure 25 shows the amount of land destined for each crops production over the last decade. The cooperative members produce these crops in two agricultural campaigns per year, one in the summer and one in winter. The distribution of the area destined for each crop is varies depending on the campaign, the expected prices of the crops, and the weather conditions of the year. Figure 26 shows the distribution of land assignation for each crop depending on the campaign.



	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Soya	25,090	24,627	27,158	25,266	28,094	28,391	28,610	23,945	23,099	21,883
Wheat	18,997	16,864	15,537	18,962	20,047	21,489	17,112	12,966	11,825	9,098
Rice	6,040	5,826	5,821	5,295	5,136	5,959	5,681	5,550	6,502	6,311
Corn	1,277	2,084	1,907	783	1,319	897	2,136	2,331	4,105	3,710
Sorghum	1,088	2,173	3,556	2,072	2,433	1,907	2,104	2,555	3,624	5,569
Sugar Cane	1,315	2,134	922	1,099	1,643	1,642	2,000	2,000	2,486	2,992

Figure 21 Land Distribution by Crop Expressed in Ha. Data from CAICO (2019)

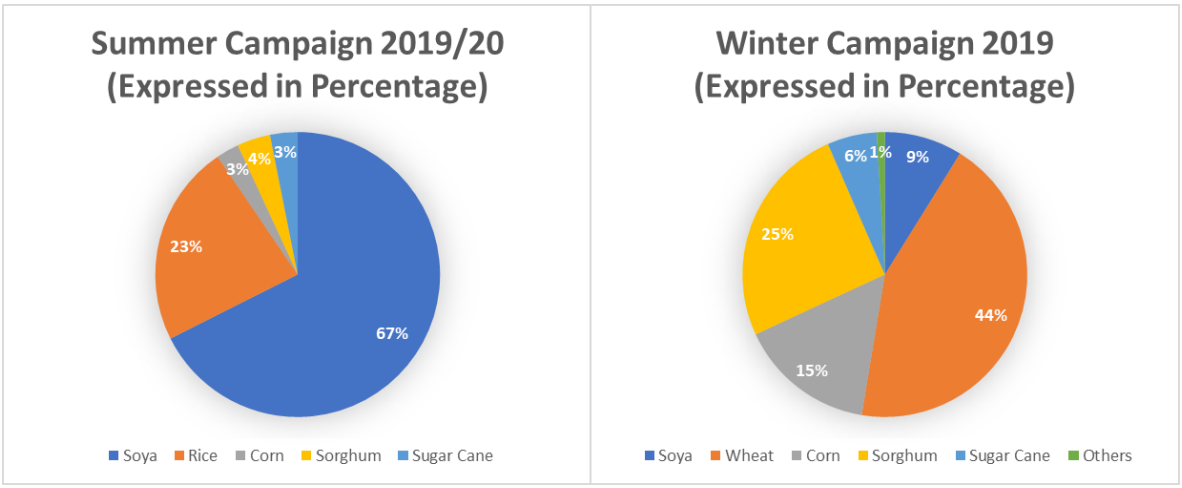
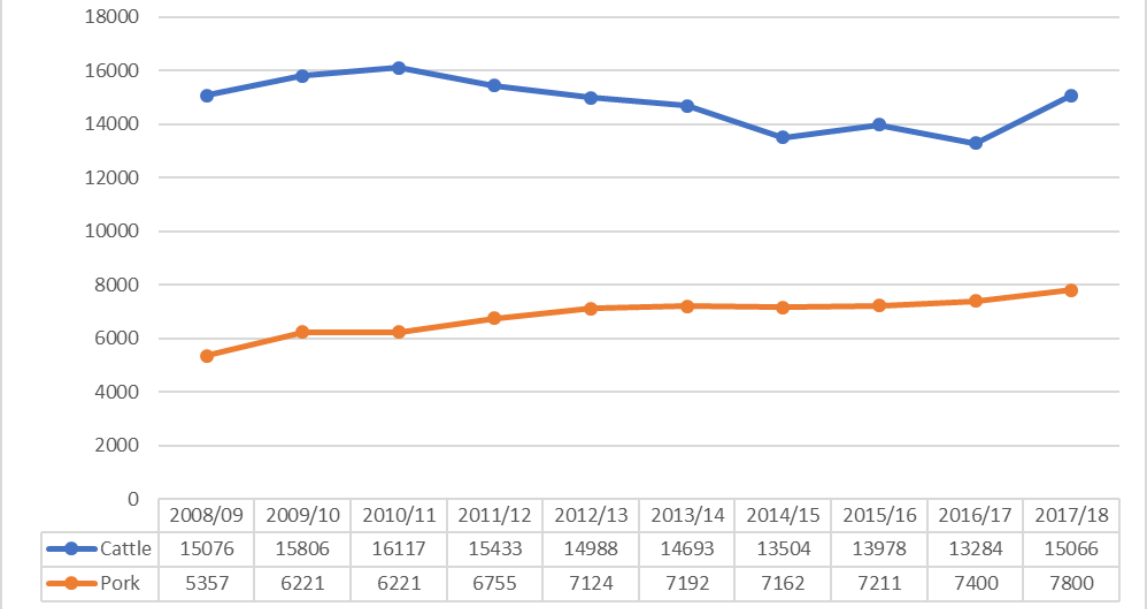


Figure 22 Distribution of Crops per Campaign. Data from CAICO (2019)

In terms of the livestock production of the cooperative members, the members work with three different kinds of cattle. The production of the cooperative is focused on beef cattle, dairy cattle and pork. The cooperative members have invested in the genetic development of their livestock. Currently the population of beef cattle is around 11.800 cows, the dairy cattle population is around 2.400 cows, and the pork population is around 7.800. Figure 27 shows the evolution of the cattle population over the last decade.



	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Cattle	15076	15806	16117	15433	14988	14693	13504	13978	13284	15066
Pork	5357	6221	6221	6755	7124	7192	7162	7211	7400	7800

Figure 23 Livestock Population Expressed in Number of Animals. Data from CAICO (2019)

These levels of throughput created a need from the cooperative to generate infrastructure to store and process the members' production. For this purpose, the cooperative developed an agroindustry complex capable of dealing with the throughput levels of each campaign. This agroindustry complex

is focused on grain processing and storage. The complex has three main areas, a soya processing plant, a seed processing plant and the storage silos.

The soya processing plant has a capacity of processing between 5,000 to 6,000 tonnes per month. This plant has a state-of-the-art vacuum-based soya deactivation system. This system allows the obtention of high-quality integral soya ideal for animal balanced feed production. In terms of the seed storage plant, it is focused on producing and storing soya and wheat seeds for the members production. This plant has been certified by an independent quality control laboratory to ensure the seed meet international standards. The plant has a seed cleaning section, a classifying system, a drying system with capacity of 1,040 tonnes and a cold storage facility with a capacity of 3,000 tonnes. Additionally, the seed storage plant has developed a series of silos with a capacity of almost 1,200 tonnes for storing seeds during harvest and processing them later. Finally, the seed storage facilities have 7 silos with a total capacity of 110,800 tonnes. these storage facilities are focused on storing soya, wheat, and rice for further processing before commercialisation. The other crops are sold without processing, so they do not go through these facilities.

In terms of cattle, the cooperative has an auction centre for cattle located in the colony Okinawa 2. This auction centre allows farmers to buy and sell cattle to and from other farmers according to the conditions of the market or to manage the genetics of their cattle. To aid with that, the cooperative also has a cattle genetic improvement centre that provides veterinarian support for the cooperative farmers. Also, for the handling of the dairy throughput, the cooperative also developed a milk storage centre to gather the daily throughput. These storage facilities have a capacity of collecting 6,200 l per day and a total storage capacity of 16,200 l.

The other main area developed by the cooperative is the mill and pasta processing plant. This plant was designed to generate more value addition to the members' wheat production. The plant is divided into two sections, the mill and the pasta processing plant. The mill has a capacity of processing 120 Tonnes per day of flour. The mill is capable of producing three main products: High-grade bakery flour, flour for pasta production, and wheat bran. The pasta processing plant is located next to the agroindustry complex and has a direct connection to the wheat storing silos. The pasta processing plant uses the flour generated by the mills as its main input. This processing plant has two main production lines, a short pasta line, and a spaghetti and farfalle line. The capacity of the short pasta line is of around 3.000 kg per hour whereas the spaghetti and farfalle pasta lines have a processing capacity of 500 kg/hour.

Even though the Agroindustry complex and the mill and pasta processing plant were developed by the cooperative, since their separation from the cooperative in 2013, they work as independent

companies. This changed their relationship with the cooperative because the cooperative now has to pay for the services of each company. The cost of these services is determined according to the market conditions of each season and the level of expected throughput. Additionally, because these two companies are independent, they are not limited to working only with the cooperative's throughput and they are open to working with other clients. Also, the prices they charge for the processing and storage services are the same for the cooperative and for other clients. Conversely, because of this independence, the cooperative is not obliged to send their throughput to the agroindustry and can look for better prices elsewhere.

3.1. Markets and Products

Because of the wide array of products that the cooperative members produce, the need to generate profitable markets for their members throughput. The cooperative's role is mainly focused on developing those markets and ensuring the maximisation of profitability for the members. Each product produced is traded according to the conditions required by the destination markets. In the past, the cooperative was mostly focused on developing exporting opportunities for their members. However, the restrictions on the export of many crops determined by the previous government changed their focus towards the national market. However, the policies regarding lower national prices for crops like wheat, corn, and soya established by the government had a considerable impact on the profitability of the cooperative.

The fluctuating nature of prices of the commodities that CAICO works with generates a big variability in the revenue generated by the sales throughout the agricultural campaigns. To deal with this, the cooperative implemented a price policy to homogenize the returns for members. The cooperative averages the prices of each crop at the end of the campaign and pays the members the same price depending on the volume of throughput. This policy, however, can create a portfolio problem because farmers cannot take advantage of temporal increases in prices to improve their individual returns.

The cooperative has different markets and products for the members' crop throughput. The cooperative is charged with commercialising the members' throughput and the logistics from the cooperative offices. However, due to the small scale and the market conditions of certain crops, not all of the members' throughput is obliged to go through the cooperative. The production of soya and wheat are the only crops that the members must send as a whole. However, the production of the other crops, like corn, rice and sorghum, is subjected to negotiations with the cooperative and can be sent partially.

Actually, the members would have to sell all the production through the cooperative. But there are products like corn, sorghum and rice that we cannot sell in its totality, while soybean and wheat have to be sold only by the cooperative. This happens because prices vary a lot for certain products and producers can take advantage of this difference. This situation is especially true for corn and rice, where many of the producers have other clients that offer them better sales prices. In these cases, an agreement can be reached of 50 percent for the cooperative and 50 percent for another client. (Respondent 11, 2020)

In terms of soya and wheat, they are mostly processed and sold through the agroindustry company. However, this depends on the prices offered for the throughput. The soya produced by the cooperative is usually processed and transformed into animal feed. This feed and the other sub products that result from this processing are mostly sold in the domestic market. Only 20% of the cooperative's soya production is exported. This is due to the restriction to exports imposed by the previous government in 2008. Similarly, the wheat produced by the members is processed by the mill and the pasta factory. The main market for the products of this processing is the domestic market as well. The flour produced is sold mostly to bakeries whereas the pasta is sold to wholesale clients in Cochabamba, Oruro, and Santa Cruz. Figure 28 shows a sample of the production from this plant. The markets for soya, corn and sorghum are poultry farms in Cochabamba, main city of the valley region of Bolivia.

Figure 24 Sample of Pasta Production

Before the implementation of the exporting restrictions, the cooperative used to be the biggest exporter of soya in the region. The main international market for the cooperative's soya is the neighbouring country of Peru. The existence of these restrictions does not allow the members to access better paying markets and has a negative effect on the profitability of crop production. However, the new transition government decided to lift the export bans in January 2020. The cooperative has good expectations for the outcome of this change in policy.

> *The government imposes the amount of your production that you have to sell within the country and establishes a preferential price that is usually below cost. This loss has to be subsidized by exports. They also don't allow us to export corn, which made us focus on producing wheat and soybeans that have a better price. Although it is recommended that in between two wheat crops you plant corn and sorghum. The price of the latter two are very unstable, this complicates the land rotation and the soils have been affected. One needs to produce corn and sorghum within this production system. (Respondent 9, 2020)*

Since the agroindustry company, and the mill and pasta factory do not only work with the throughput of the members, they also provide processing services to external clients. The main client for these two companies was the government owned EMAPA, Company for the Support to the Production of Food for its Spanish initials. The main service that EMAPA required from the companies was the milling of wheat for bread flour. During the periods of high demand from EMAPA, the mill would work 3 weeks for them and 1 week for the throughput of the cooperative. The distribution of the outcome of the milling process also changes. The usual distribution when the mill processes the cooperative's throughput is 50% bread flour and 50% pasta flour, whereas for EMAPA the distribution of the flour was 90% bread flour and 10% pasta flour. However, after the November elections and the civil unrest that came after it, the transition government decided to suspend all the processing contracts with EMAPA. This created a lot of uncertainty for the processing operation of the companies for this year.

Because the size of the livestock production is considerably smaller than the crop throughput, the commercialisation of this area is more straightforward. The dairy production is collected in the cooperative storage facilities and the sold to PIL, the main dairy company in the country. In terms of the cattle and pork production, these are either traded to other farmers for cattle fattening or to intermediaries for final consumption.

3.2. Services to the Members

The cooperative provides a series of services to its members. These services are not only limited to providing support to the agricultural production to their members. The cooperative also puts

emphasis in the personal and social development of their members. Also, the cooperative makes efforts in preserving and reinforcing the connection of the members with their Japanese origins.

The main service that the cooperative provides to its members is the bulk purchase of agricultural inputs for their production. The economies of scale behind these bulk purchases benefit the cost structure of the members and allow them to obtain better conditions from the suppliers. The inputs usually included are fertilizers, pesticides, seeds, and other inputs focusing on minimising the cost for the members. The amounts required by each cooperative member is determined according to the forecasted production that each member provides for the season and under the supervision of the technical support team. They also take care of the logistics and storage of these inputs for the members. And, even though the negotiations and purchases are done as a group, the invoicing process is done individually for each farmer for tax-related purposes.

> *The associates visit our facilities and make their consultations with the technicians. When the technicians have the recipe, they can pick up their supplies. If necessary, a field visit is coordinated with the technician, to inspect and see what needs to be done. Then the associate goes to the secretary and schedules the order. We normally schedule the order two months before the start of the campaign. We place orders twice a year. (Respondent 8, 2020)*

The cooperative also provides technical service to improve their members' yields and farming conditions. Through the technical support team, the cooperative can provide a wide array of services to their members focused on improving farm practices and minimising loses. The services provided by the cooperative include supervision and training in the correct use of fertilizers and pesticides, disease control, sowing, and harvesting procedures among others. Additionally, the cooperative established a periodical visit schedule to the members' farms to provide support with the production. However, changes in the periodicity of these farm visits implemented by the board have generated a negative reaction from the members.

> *Well initially the technicians visited the fields of the associates weekly, but it was not possible to specify. Sometime later, in a meeting it was decided to suspend the weekly visits and, in any case, if the fields were visited it would be once a month or when necessary. It was also decided that we should concentrate our efforts on looking for alternatives to improve productivity. It is there that many were not happy with this decision. Many expressed that if we didn't go to their fields to see how they were doing, we wouldn't be of any use to them. Even so, we had to abide by the new guidelines proposed by the new board. (Respondent 8, 2020)*

The cooperative, through CETABOL, also generate research initiatives into the improvement of farming practices within the cooperative and testing agrochemicals and other inputs. The cooperative has provided experimental grounds to CETABOL to test new fertilizers, pesticides and soil fertility management to see how well they adapt to the conditions of the region. Additionally, CETABOL performs research on animal breeding and genetic merit improvement for cattle. For this purpose, the cooperative established an agreement with Universidad de San Pablo in Brazil. However, even though the management of CETABOL is under the tuition of CAICO, the results of the research and development work performed in these experimental centres is not limited to members of the cooperative. Because CAICO established that CETABOL must be financially self-sustainable, it offers its services to farmers and other institutions in the area.

> *Initially, JICA (Japan International Cooperation Agency) created CETABOL as a grant for cooperatives to continue agricultural research and development. Later CAICO took over the reins of CETABOL with the condition that this foundation be self-sustaining. (Respondent 8, 2020)*

The cooperative also provides a series of services more directly related with improving the conditions of their members' work. One of these services is the provision of credits to the producers to help with the operational costs of each sowing campaign. These credits are assigned based on the amount of land the members have and the kind of throughput they plan on producing each season, 450 USD per hectare in the summer campaign and 400 USD on the winter campaign. The interest rates the members pay, currently 3%, is considerably lower than the average rates in the market. Additionally, the cooperative provides training to their members through the education department. This department incentivises visits to other cooperatives and companies working in the industry to increase the knowledge of members and staff of the current practices in the industry. They also provide seminars, conferences, and workshops with specialists in the industry to improve the conditions of the cooperative. Finally, the cooperative negotiates insurance policies for the members as a group. Through this, the cooperative can obtain better conditions in the policies and better prices for coverage for their members. This is particularly important considering the lack of health and accidents welfare programmes available for farmers in the country.

The cooperative also plays an important role in the social development of the members. They work closely with the Bolivian Japanese Association of Okinawa, schools, the municipal government, and other organisations to coordinate cultural, social, and sporting activities with the other members of the community. This relationship is important to maintain and reinforce their cultural ties with their Japanese heritage.

The role of the cooperative evolved over time. Originally, because of the distance and separation from the main city centre, the cooperative was vital for the members. Nowadays, the colony is only an hour away from the largest city in the country, so the integration has grown considerably.

> *The city is much closer than when our parents started the co-operative, 65 years ago. I remember that it took one whole day to come to the city, and the road was awful. You would stay in the city one night and return to the colony. Now it takes an hour and a half to get to the city. I go to work and come back easily. Speaking of education, many have the possibility of becoming professionals. In our time, we are 10% of young people who are professionals. Now 70% are professionals, if I am not mistaken. (Respondent 11, 2020)*

4. Membership Structure

CAICO R.L. is an integral cooperative formed by the merger of the three cooperatives created in the colonies. According to the current cooperative legislation, CAICO is classified as a first-level cooperative, see Chapter 2 for more details on the cooperative structure in Bolivia. However, due to the transition process to comply with the new legislation in 2013, CAICO has decided to separate their processing facilities from the rest of the cooperative structure. This has had a considerable effect on the structure of the membership of the cooperative because it divided the ownership of the assets of the cooperative into three independent organisations.

The membership structure of the cooperative and the companies that were created from it have a similar composition among themselves but are independent from each other. The cooperative is made of 124 farmers that have land within the three colonies of Okinawa. All these members are descendant of the original Japanese migrants that formed the colonies. The land tenure among the members varies, however the average tenure is around 20 hectares. Even though the members mostly have their plots of land within the colonies, some of them also own land in other regions. The throughput generated by the members outside the colonies is not demanded to go through the cooperative. However, if the members decide to do so, they can sell it through CAICO.

> *They are part of the cooperative. They can sell their product to another client, but that does not take away the possibility that they are part of the cooperative. A member does not lose the right to be a member of the cooperative by investing in other land (Respondent 11, 2020)*

Even though the cooperative provides technical support for its members, it does not provide the members with machinery for the productive process. This is because the members tend to own their own tractors and machinery necessary for their production. The members opted for purchasing their own machinery because of the unreliability of renting it, especially during the high activity part of the

season. Additionally, neighbouring members tend to coordinate their usage among themselves with members that do not have machinery.

The fact that the current members of the cooperative are descendants of the founders of the cooperative has created a generational structure in the member base. The membership of the cooperative is usually inherited to the members' sons or daughters once the member retires, or the plot of land is divided as the member son or daughter decides to become independent.

Another important factor that defines CAICO's membership is their common cultural background. Given that all members come from a common Japanese background, the interactions among members and with the cooperative. An example of this is the effect that elder members have on the decision-making process of the cooperative. The sense of group work and the principles of the cooperative model are also better accepted because of the influence that the original colonisers had. This was created by the fact that the farmers that emigrated from Japan were used to work as a cooperative and emigrated with the intention of forming one to help to develop the forming community.

> *Becoming a member of CAICO and working in Okinawa is part of our culture, and if we decided to leave it, we would lose that with some Japanese customs. (Respondent 10, 2020)*

In terms of ownership of the other two companies, they have a different and independent ownership structure. Both companies work as corporations and can emit shares that are not held to the same conditions as cooperatives. The shareholders of these companies are the members of the cooperative. However, buying these shares is optional for members and it depends on their preferences, size and profitability. The decision of purchasing shares in these two companies also depends on the kind of throughput the members work with. These shares pay revenue to the members, however the cost of acquiring them is the main factor that deters members from getting them. Also, even though they are open corporations, the ownership remains closed to only members of the cooperative

4.1. Requisites for Membership

The requisites to accept new members into the cooperative are defined by the cooperative law. However, the specific details of membership requisites are defined by the board of the cooperative. The requisites to become a member of CAICO relate to two main factors: that the members have a plot of land in the colonies, and the support of two current members of the cooperative. The minimum amount of land that an applicant must have within the cooperative is 50 hectares. The board of the cooperative analyses each case and decides on the applicant. Additionally, despite the open entry conditions for cooperative membership, all the members of CAICO are from Japanese descent.

The other main requisite for becoming a member of the cooperative is to make a monetary contribution to the cooperative in the form of a share. This share holds a nominal value according to the amount established by each first-level cooperative and is extended to perpetuity and it is returned to the member when he or she decides to exit the cooperative. The conditions of these shares are defined by the current cooperative legislation. The exact amount of this contribution was not disclosed by the interviewees; however, it is a considerable amount. Additionally, the members must pay an annual non-refundable contribution to cover the operational costs of the cooperative. The conditions of this annual contribution will be discussed in more detail later in the document.

> *First you must pay a commission, which is a certain amount that varies from year to year. There are two contributions, one that is fixed for everyone and another that is paid year by year depending on the amount of land you own. (…) The contribution that is made to join the cooperative is returned if you decide to leave the cooperative. On the other hand, the contribution that is paid annually is a commission. (Respondent 10, 2020)*

4.2. Membership Process

The process of becoming a member of the cooperative is very straightforward. Once the board has verified that the applicant complies with the requisites established by the cooperative, the affiliation to the cooperative is immediate. However, even though the member is immediately accepted into the cooperative, there is a waiting period before he can apply for positions in the board. The waiting period is formally defined at three years as a minimum. However, the average member must usually wait 6 or 7 years before applying for a position in the board. The members must go through a series of other positions within the cooperative and the related companies to be able to apply for a board position.

> *(Being part of the board of CETABOL) is a step. I believe that once I finish my work in CETABOL, they will invite me to a position in the board of the cooperative. (Respondent 10, 2020)*

4.3. Membership Growth

The member base of the cooperative has remained relatively stable in terms of number of members. However, because of the generational structure of the cooperative, there is a constant change in the structure of the members. Upon their retirement, older members cede their shares or divide their parcels to allow younger members into the cooperative. This creates a renovation in the member base, but not growth over time.

> *There was no growth (in the member base), but there were changes. The parents left the cooperative and gave way to their children entering. Perhaps there was growth, because some*

parents are still passive members and their children have taken a more active role. I think this happened because it is easier for the member to enter as a new member than to transfer their membership from parent to child. (Respondent 8, 2020)

Throughout the history of the cooperative, some of the original members or their descendants have left the cooperative. This is reflected in the fact that not all the landowners in the colony are part of the cooperative. Some of the reasons for former members to leave the cooperative are age, the inability of paying credits, or disagreements over the management of the cooperative. The case of the members that leave the cooperative for not being able to pay off their debts will be explained further

50% (of the people living in the colony) are not members, considering people of legal age. If we only count the producers in the area, 80% are from the cooperative. That is, if we count all the families, which are 250, 120 are members of the cooperative. But many of these families are no longer economically active. Many of them are retired and live on the bonus of dignity and the revenues from their fields (Respondent 11, 2020)

The cooperative faces two main factors that constrain the growth of members: availability of land and the profitability of the production. According to the CEO of the cooperative, the export quotas and pricing policies from the government on certain crops mentioned before, has affected considerably the profitability of the farmers. He mentioned that in the past an operation of 50 hectares as a minimum was enough to generate profits, nowadays the minimum size necessary to be profitable is around 300 hectares. Additionally, due to the limited availability of land within the colony, expanding the farms or introducing new ones is not a possibility. Even though some members have other lands outside the colonies, those lands are not affiliated to the cooperative due to logistics and proximity concerns. These factors are driving young potential members away from the agriculture industry. Additionally, the proximity to the city and the reduction of commuting times due to integration is increasing this effect. The cooperative is looking into ways of increasing the value addition of their production and improving their use of technology to incentivise young members of the colony to become members in the future.

5. Finance

The nature of the cooperative and the companies that originated from it generates the need for an effective financial management that can provide useful information for the decision-making process. However, due to the independent structure of these organisations, the financial management is also managed independently. Additionally, the companies and the cooperative have different focusses on

their business models, so their financial objectives are different. This is reflected in the structure of their operational budgeting, profit distribution, and investment management.

5.1. Operational Budgeting

Every season, CAICO plans its operational budget based on the expected level of throughput generated by the members. This forecasting is done through a surveying process that the cooperative does to all its members at the beginning of each sowing campaign. This survey is focused on determining the sowing intention that each member was planning on their land. Based on these surveys, the members sign contracts with the cooperative to ensure the throughput for the campaign and to access the credits provided by the cooperative. The survey is designed and implemented in coordination with the technical support team and the management staff of the cooperative. The staff gathers information on prices and meteorological information to provide the members with useful information to decide the distribution of their crops.

> *We do a survey where producers can apply for financing. In this one it is stipulated that it is going to be planted, the request of financing, and the mortgage guarantee or, in case it does not count on it, two associates as guarantors. This is signed by the associate and the guarantors, if there are any, and the order of supplies is filled. The financing is an amount per hectare. (Respondent 8, 2020)*

With the information obtained from the member survey, the cooperative can determine the quantity of inputs necessary for the campaign. The cooperative negotiates the bulk purchase of these inputs and arranges the logistics necessary for it. Each member gets invoiced and pays independently for tax purposes. Additionally, the cooperative budgets the administrative costs and other costs related to the operation of the cooperative. This operational budget is financed by the annual contributions of members. these contributions are calculated according to the extension of land or number of animals each member has. The cooperative budgets these contributions aiming to cover the costs and not generate a surplus. The budget is then presented to the General Assembly and approved.

> *Depending on the producer. We charge 8 or 9 dollars per hundred hectares per year and if we talk about cattle we charge per head. This covers the entire Technical Support system. (…) This contribution is a fixed amount. It has not changed for 7 years, but it can change from time to time. (Respondent 11, 2020)*

The operational budgeting of the two companies that were part of the cooperative also depends on the level of throughput expected from the cooperative. However, because they work as independent entities, they do not only depend on the cooperative as their source of income. These companies also

consider the projected income from the service provision to EMAPA. Their planning is based on historical information on the behaviour of clients and the market for the season. Due to their independent structure, the companies do not receive any financial support from the cooperative.

5.2. Distribution of Profits

Due to the conditions of the market over the last 5 years, the cooperative has not generated surplus or retained earnings from the sales of the throughput. The main source of income for the cooperative and its members is the commercialisation of the throughput generated by the agricultural production of the members. The cooperative sells the throughput generated by the members to the different markets established before. Once the season finishes, the total income generated by the sales is distributed among the members. The distribution is done through an average of the prices received throughout the commercialisation process. This ensures that each member receives the same price regardless of the time they delivered their throughput. This is done to decrease the incentives for members to take advantage of higher prices at different stages of the season. Since the cooperative has covered its operational costs through the annual contribution made by the members, they distribute the total income generated by the commercialisation of the throughput to the members.

> *There was a time, when the co-operative retained a percentage of 2% as an emergency fund. Now this no longer exists, but four years ago it was a common practice. In 2015 there were floods where a lot of crops were damaged, and this fund was used so that the producers could pay their debts. (Respondent 8, 2020)*

This was not always the case for the cooperative, in previous years the cooperative used to retain 2% of the sales of the cooperative. These funds were retained as an investment fund over a period of 8 years approximately or until the fund reached 8 million US dollars. Once this fund reached its goal, then it was distributed among the members to help with the purchase of machinery or other investments in their farms. This fund helped the members to obtain most of the harvesting and planting machinery currently available in the cooperative. According to the CEO of CAICO, the last time this fund was implemented was between 2008 and 2016. After this, the members did not agree to implement this fund again due to the unfavourable conditions of prices and restrictions to international markets.

In terms of the distribution of profits for the two companies generated from the cooperative, they distribute them independently to the cooperative. Due to their structure, these companies distribute their profits at the end of the fiscal year and according to the legislation of the country. This

distribution is limited to the members that own shares in the companies and is distributed according to the number of shares that they own.

5.3. Credit Management

One of the main financial services that the cooperative provides to its members are the short-term credits to cover their operational expenses. These credits are given based on the amount of land or the cattle that the member works with. The amount each member is entitled to varies from year to year and depends on the season. However, they oscillate between 400 and 450 USD/Ha. The members pay an interest rate over these credits of around 3%. The credits are given at the beginning of the season and are collected at the end of it. In the case of some crops, like soy, the credit is directly discounted from the distribution of earnings. Each credit is backed by a mortgage collateral from the member or a personal guarantee of 2 members of the cooperative. The cooperative has a fund of approximately 8 million USD for these credits. However, when the cooperative needs more resources for the credits they often access short term bank credits to cover for this need.

> *Not the price. We do a survey where producers can apply for financing. In this one it is stipulated that it is going to be planted, the request of financing, and the mortgage guarantee or, in case it does not count on it, two associates as guarantors. This is signed by the associate and the guarantors, if there are any, and the order of supplies is filled. The financing is an amount per hectare. For example, in the soybean industry, financing is $450 per hectare. This amount varies depending on the crop. A person who has 100 hectares has the possibility of borrowing up to 45,000 dollars, with a mortgage guarantee or personal guarantors who have to be members of the cooperative. (Respondent 8, 2020)*

When the members fail to pay their credits, then the cooperative executes the guarantees to recover the amount lent to the member. When this occurs, the members often opt for selling, partially or totally, their plots of land and exit the cooperative to cover their debts. This does not happen too often, but it still represents a reason for members to leave the cooperative.

5.4. Investment Funding

CAICO has characterised itself by generating a series of investments focused on improving the value addition of the throughput generated by the members. The cooperative has funded these investments through the contributions of their members. These investments have been made using capital reserves of the cooperative and by contracting debt from banks. They were mostly focused on developing infrastructure for storage and processing of the members' throughput. The structure of the assets and the credit history of the cooperative guarantee a good access to external funding for

the cooperative. The investment projects must be approved by the member assembly. Additionally, in terms of improving the access to machinery and other investments at a member level, the cooperative's policy on retaining a percentage of the sales was the main method for generating these investments.

> *The last big investment was the seed company. We have been renewing the equipment little by little. Since it's an old plant, we must invest in renovations. We're always looking for new equipment to add to the raw material. (Respondent 8, 2020)*

The separation of the two companies from the cooperative due to the new legislation applied for cooperatives in Bolivia had a significant effect on these policies. This separation generated that most of the infrastructure does not belong to the cooperative anymore. The uncertainty that this change in legislation has created in the cooperative modified the way the cooperative will face future investment projects. This is because all the future investment projects done in the two companies that were part of CAICO will be independent from the cooperative. They will have to be funded under a corporative structure. Also, the approval of these projects will be done through the Board and not necessarily the member assembly.

6. Strategic Planning

CAICO does not have a strategic plan designed to determine its long-term objectives. Most of the planning don for the cooperative is done at an operational level. The planning horizon for the cooperative is limited to a yearly basis. However, even though the long-term objectives are not formally established in the cooperative, they are present in the perspective of the members for the cooperative.

6.1. Expansion Projects

Currently, the cooperative has no major expansion projects approved for the near future. The main reason behind this is that the financial situation of the members has not allowed for expansion projects to occur. Even though it is recognised among the board and the management staff that increasing the value addition is essential to increase the profitability of the cooperative's operation, this has not translated into concrete expansion plans. This is also true for the two companies that came from the cooperative. Despite the existence of expansion proposals, none of them were approved by the board of each company.

> *Currently all the machinery and infrastructure used by the mill were built when it was part of the cooperative structure. After the creation of the company as an independent entity, no new*

expansions have been performed. I have presented some projects but none of them were approved. (Respondent 13, 2020)

The lack of expansion projects reflects the change in the attitude towards risk of the cooperative. According to the CEO this change in the attitude was created by two main factors. One of them is the loss of profitability generated by the policies implemented by the government in terms of the restriction to the export of certain crops and in terms of taxation. This is creating a lack of incentives to invest in more infrastructure for the cooperative and for the members.

The other main factor relates to the generational structure of the member base. The average age of the members in the board is above 50 years old. According to the CEO of the cooperative, the members become less likely to invest in big projects. Additionally, the current attitude of older members is to wait until the younger members take charge and assume the debt that those expansion projects will generate because the older members have done it already.

7. Future of the Cooperative

The cooperative is facing a series of challenges in the future related to the way the incentives for being a member are evolving. The cooperative must develop ways to incentivise new members to join the cooperative. According to the members of the board and the management staff, this must be done by increasing the profitability of their operations and increasing the value addition to the throughput.

The lifting of the export quotas for crops established by the new transition government will have a positive effect on the profitability of the cooperative's activities. However, the true dimension of this effect is yet to be observed because of the short time of its implementation and the uncertainty regarding the continuity of this measure due to the political situation of the country. Nevertheless, this change in access to external markets does not necessarily imply the solution to the challenges of the cooperative. The diversification of their sources of income through the development of new markets for more processed products is a good way of improving their profitability and diminishing the risk generated by external factors. These factors can be the introduction of new policies that limit the access to external markets or regulation of domestic prices, as well as the volatility of international commodity markets

The cooperative must also analyse the effect that the changes in the economic incentives to join the cooperative will have on its future. The increase in the integration with the main urban centre of the eastern part of the country, the city of Santa Cruz, has had a drastic effect on the perceived need for a cooperative structure. This is reflected in the fact that younger people are less interested in becoming farmers. Additionally, with the separation of the processing and storage divisions, the role

of the cooperative in terms of generating value addition is becoming less evident. Even though the cooperative still represents a major advantage in terms of negotiation power with the purchase of supplies and the commitment to the cooperative is still important for the members to remain in the cooperative, this could change in the future if the role of the cooperative and its objective are not revisited and adjusted to the changes in its environment.

Another challenge that the cooperative must face in the future is the efficiency in the decision-making process. After the separation of the cooperative and the companies that were originated from it, it became evident that the decision-making process in the cooperative was considerably slower than that of the companies. This allowed the companies to react faster to changes in the industry and to establish changes more efficiently. However, it also presents a trade-off between the democratic nature of the cooperative model and the versatility of the corporate process. Given the changes in the ownership structure and the challenges the cooperative is facing towards the future, this trade off will have to be considered at a larger extent.

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