

KEMI-TORNIO UNIVERSITY OF APPLIED SCIENCES

Strengthening the competitiveness of the wine and olive oil
clusters in Mendoza, Argentina

Optimizing the benefits of the cluster model

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ABSTRACT

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This Thesis emerged from my personal interest in exploring how the concept of clusters was applied in a real business context and therefore the wine and olive oil clusters in the province of Mendoza in Argentina were explored. The aim of this Thesis was to expose the different obstacles surrounding the clusters, outline future opportunities and explore the feasibility for strengthening competitiveness in the agricultural sector.

The data was collected through interviews and questionnaires. Cluster experts and members of the agricultural clusters were interviewed and questionnaires were sent to them. Additionally, documents and literature related to clusters were reviewed in order to create a triangulation of data that contributed to building validity for this research.

From the analysis of the data collected, a dichotomous vision of externalities influencing the clusters was identified. The different way both clusters were implemented was found to have no influence in the dynamics of the clusters, while a dependency relationship was recognized between one of the clusters and the government. Moreover, innovation was found to be only partially effective to minimize the political and economic external factors plaguing the clusters. In addition, a possible misunderstanding of the concept and use of innovation were detected.

The outcome of this research comprises information that could be applicable and useful for the future strategic planning of agricultural clusters in Mendoza. The recognition of factors influencing the cluster dynamics together with the strategic steps suggested on this Thesis could serve as an initial instance for outlining a feasible path towards strengthening the competitiveness of the wine and olive oil clusters in Mendoza.

Key words: clusters, competitiveness, dynamics, drivers, regional development, innovation, agriculture in Mendoza

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Last but not least, my appreciation goes to my family for their endless patience and support throughout the process of writing this Thesis. They were my strength and motivation during difficult times. Their critical comments helped me to analyze many of my ideas and develop a stronger Thesis that hopefully fulfills the objectives laid out.

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1 INTRODUCTION

1.1 Motivation and background

My personal interest for carrying out this Thesis work emerges from the necessity of bringing to light the situation of two agriculture clusters, namely wine and olive oil, in the province of Mendoza, in Argentina. On the one hand, this research is inspired on the willingness to offer a new perspective into the role of clusters' dynamics. On the other hand, this research seeks to enable a deep understanding of the context and unique characteristics of both agriculture clusters. Eventually, this understanding can lead to the implementation of accurate regional and national policies that could specially benefit the clusters explored in Thesis work.

The topics of clusters, competitiveness and innovation have been for years the subject of study of many prominent names in the academic world such as Paul Krugman (1991) Michael Porter (1998) and Örjan Sölvell (2008). While some works have analyzed the role of clusters in fostering development and innovation (Rocha 2002) others advocate that clusters can be used as a constructive tool (Sölvell 2008). What is more, a contemporary study emphasizes a growing intellectual and political interest in clusters (Karlsson 2008).

Clusters have been positively accepted at the academic and at the policy level in many countries. In fact, recent studies done at the Center for Strategy and Competitiveness (CSC) at the Stockholm School of Economics show some of the positive benefits that clusters can bring to the economics of regions and nations (Sölvell et al. 2009). Nevertheless, there are still today many questions regarding the real dimension of the clusters' contribution to the prosperity, competitiveness and innovative development of regions.

The aim of this Thesis is not to measure the dimension of the impact that the cluster model has in regional economic activities. The aim is rather to expose the need for certain considerations to be taken, at a regional level, which will ultimately enable the optimization of the benefits of the cluster model already in use. A closer focus on the factors influencing the clusters and a wide understanding of the opportunities for the

agricultural sector in the internal and external markets are only part of the actions that can be triggered by the research made on this Thesis.

Being from Argentina myself and having acquired a wider understanding about the cluster concept is another powerful motivating factor for carrying out this work. The tacit knowledge gained throughout the years in Argentina and my embeddedness in its culture, enables me to perform an in depth analysis of the socio-cultural, economic and political context that surrounds the wine and olive oil clusters. This tacit knowledge provides also an unparalleled opportunity to offer through this Thesis work an accurate view based on the added value that represents being familiar with the history and culture of Argentina.

After having reviewed different texts and materials written about clusters, I came to the conclusion that the examples given of clusters in South America are scarce. What is more, no deep study has been done about the situation of the agriculture clusters in Mendoza, despite the multiple efforts of the province to develop the clusters through different programs. Only the recent paper of Galvez-Nogales (2010) has briefly mentioned some characteristics of the agriculture clusters in Mendoza, but this is certainly not enough to understand the context and dynamics of the clusters in that province and definitely not sufficient to trigger changes in the agriculture sector.

After years of cluster studies performed around the world, there are still today too few concrete real life examples of how clusters are shaped and develop over time. This Thesis's focus on South American clusters, and particularly to Mendoza as a highly productive region, could offer an interesting overview on the different conditions that shape clusters in developing countries. This could, in time, attract the attention of academics, clusters specialists and even private investors that could benefit from the information emerging from this work.

According to a United Nations newsletter, with a global population projected to grow to 9 billion people by 2050, mostly in the developing world, food production will have to expand, perhaps even double, to meet growing world demand (DESA News 2008). It is then in the future, when the agricultural sector will play a fundamental role in people's existence. Therefore, there is today a critical need to pay special attention to this important economic sector and to the tools, such as clusters, to help develop a sustainable agriculture.

Cluster dynamics, competitiveness, and innovation are the selected topics for this Thesis work due to the increasing significance they all have in the current business world (Karlsson 2008; Ketels & Lindqvist & Sölvell 2008; Galindo & Guzman & Ribeiro 2009). In this Thesis work, the concept of cluster dynamics per se is defined by the level of clusters' proactive actions towards building competitiveness and innovation as well as the reactive actions to confront changes presented by external drivers. One example of this is that "many clusters enjoy the knowledge asset and research infrastructure that are necessary for the development of an innovation-based development strategy, but they differ dramatically in their capacity to mobilize these assets in the pursuit of such strategy" (Wolfe 2009, 186).

As explained in the last excerpt from Wolfe, the capacity of clusters to mobilize assets is what defines the dynamics of a cluster. During this research, clusters dynamics will be observed through three different instances: how clusters operate, how all the cluster members interact with each other and how the clusters as a whole interact with the external environment.

For the context of this work, competitiveness refers to the efficiency that industries possess and demonstrate when selling their products or services in a specific internal or external market. Additionally, innovation symbolizes the perspicacity that businesses have when bringing to the market something totally new or from an original approach. Is therefore that cluster dynamics, competitiveness and innovation will help identify the position the wine and olive oil clusters have concerning the further development of their industry sector.

Due to the recent years growing phenomena of globalization, a consequent fierce competition between industries in all sectors has been the trend. Therefore, building cooperation to enable innovation and in time sustainable competitiveness, is a crucial factor to survive in today's economic scenario. Even more, recognizing own dynamics and surrounding influences can be helpful for clusters in finding the most efficient ways to adjust their activities and diminish the impact of externalities. The focus points in this Thesis are on the drivers, dynamics and, internal and external factors that impact the wine and olive oil clusters and their ability to reach a sustainable competitiveness.

By studying the type of dynamics that the wine and olive oil clusters have, this Thesis aims to take a step forward into what the renowned Swedish professor Örjan Sölvell proposed in his red book of clusters. To be exact, Sölvell (2008, 18) looks at the cluster dynamics from a holistic point of view, and focuses on exploring the amount and quality of the linkages that clusters have internally and externally.

Taking a step ahead, this Thesis focuses on identifying which is or are the strongest drivers shaping and leading the clusters. In other words, to identify which core interests of the clusters their activities represent. In order to categorize the dynamics five drivers were deliberately selected and will be taken into consideration when analyzing the impact they have on the two clusters studied here.

Here, the five main drivers that will be measured in the research instance of this Thesis:

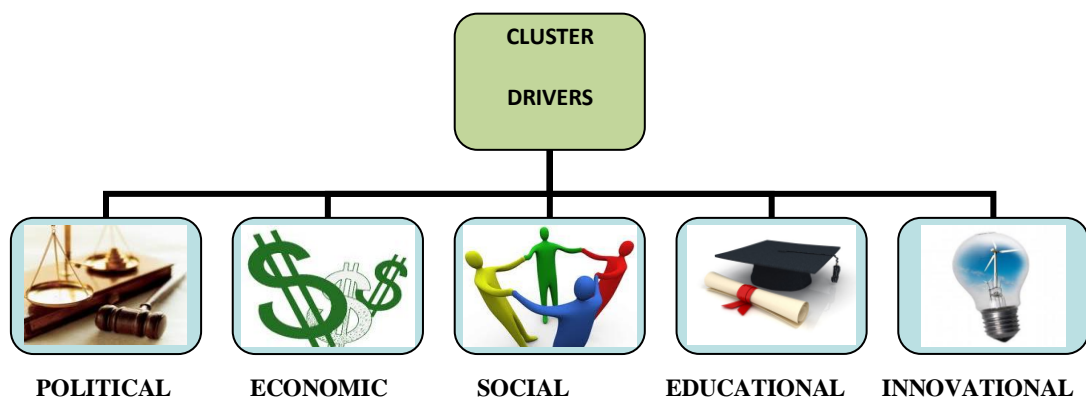


Figure 1: Drivers that shape cluster dynamics

These drivers are interpreted as the forces that conduct the clusters in a certain direction or dynamic. More precisely, drivers are the impulse that ultimately creates the dynamics of a cluster. By studying the dynamics of both clusters in Mendoza, it will be possible to understand which is or are the drivers that guide their activities. As a result of this understanding it will be feasible to enhance the activities performed inside the cluster and or tackle the difficulties pertaining the identified dynamic.

In depth discussion will be conducted when motivating research question 1 in the following subchapter 1.2 of this Thesis.

As external factors' impacting clusters two different approaches to cluster implementation are contrasted namely top-down, public sector/government driven, and bottom-up, private sector driven. Exploring these two contrasting approaches will enable a better understanding of the governance characteristics of each cluster. At this point, this Thesis stands for the idea that is necessary for clusters' members to understand the governance type and implications of their clusters. It is only then that it will be possible to make changes according needs and goals of the cluster members and not based on the governance's best interest.

As a preliminary overview, it is worth mentioning that the province of Mendoza is known to be one of the most prosperous and productive regions in Argentina. With very powerful industries in different sectors, the most famous regional product is wine. Nevertheless, the remaining industries in the agriculture sector enjoy of an overall efficient and steady production. In recent years, the cluster tool has been introduced in Mendoza with the objective of heightening the competitiveness of the value chains at a regional level.

Further analysis on the context of this research and in particular about the province of Mendoza is later presented in subchapter 2.1 of this paper.

One main objective to be achieved with this Thesis is to contribute to encourage a point of convergence regarding sustainable competitiveness in the agriculture sector. The convergence here proposed embodies an internalized and common way of thinking and

carrying out activities by focusing on enhancing internal strengths. In fact, the assumption here made is that this convergence can emerge from the clusters' self-awareness about their context and constraints menacing their activities. This main goal can be reached, by providing with this work, a more clear explanation of the benefits of strengthening the roles of knowledge and expertise to achieve competitiveness sustainable throughout time.

Additional motivation to carry out this work is firstly, to create awareness of the actual structure and characteristics of the wine and olive oil clusters. Secondly, to awaken interest in those who envision the Mendoza region as a hub for innovation and are in need of a renewed perspective. Thirdly, to demonstrate that both, the olive oil and wine clusters, can gain a closer control of the results of their activities by being aware of the present influences in their sector.

Finally, this Thesis acknowledges the need to finding feasible and case specific solutions to challenges posed by the current economic scenario. In the case of the two agriculture clusters in Mendoza, this translates to the recognition of the clusters' nature and the creation of cluster initiatives focused on enhancing the potentiality, capacity and skills of the clusters' members. In addition, the need for shifting strategy from a fast and short-termed reaching of goals to attending and solving particular needs before focusing on achieving a sustainable competitiveness is consider vital.

1.2 Research objectives and questions

In this subchapter, the main objectives for this Thesis are presented to provide the reader with the reasoning and overall idea behind the research made. Furthermore, the objectives are motivated by the points of interest that triggered this research and will lead, in my opinion, an increased understanding of the current situation of the wine and olive oil clusters in Mendoza.

The research questions, introduced also in this subchapter, guide the research and bring forward only those specific points concerning the dynamics and sustainable development of the wine and olive oil clusters. The objectives and research questions provided the framework and argument for this research to be carried out.

1.2.1 Research objectives

The main objectives of this research are first, to identify the nature of the dynamics of two specific agriculture clusters in the province of Mendoza, in Argentina. Second, the objective is to discover the level of influence that two different approaches in cluster implementation have in the studied clusters. Third, the objective is to help the actors in these two agriculture clusters achieve a new level of competitiveness by understanding the particular nature of their industries. Focusing on innovation and taking actions based on the acquired awareness is the key here proposed.

This thesis does not intend to be an analysis to categorize the successfulness or failure of the two clusters, neither is an attempt to build a new cluster theory nor merely to propose a list of theoretical steps for clusters to follow. Instead, the intention of this thesis is to facilitate the understanding of the situation, context and challenges that the wine and olive oil clusters' are facing, by exploring their dynamics and outlining their future opportunities.

By analyzing two different ways for cluster implementation, namely top-down or bottom-up, the objective is to clarify the weight that either approach has had in the dynamic of these agricultural clusters. The idea of promoting a deeper understanding of clusters' dynamics will facilitate the creation of strategic steps that these clusters could take to overcome external constraints to their activities.

Since clusters represent the tool to promote cooperation and can help enhance competitiveness by supporting innovation (Sölvell et al. 2009) it is useful to study their role in more detail at a regional level. This is, if the context and dynamics of specific productive regions and clusters can be understood and defined, the impact of cluster initiatives implemented can be adjusted to the features and needs of those regions and therefore become successful initiatives.

Concerning the statements in the preceding paragraph, it is essential to make a clear distinction between clusters and cluster initiatives. On the one hand, clusters are “a geographically proximate group of interconnected companies and associated institutions

in a particular field, linked by commonalities and complementarities" (Porter 1998, 199). Cluster initiatives, on the other hand, are "organized efforts to increase the growth and competitiveness of clusters within a region, involving cluster firms, government and/or the research community" (Sölvell & Lindqvist & Ketels 2003,15).

It is very important to stress the fact that the development idea for the province of Mendoza that this Thesis wants to put forward, responds to the concept of economic development rather than to economic growth. "While economic growth is a quantitative change in the scale of the economy in terms of investment, output, consumption, and income, economic development is a qualitative change, which entail changes in the structure of the economy including innovation in institutions, behavior , and technology" (Rocha 2004, 365). Based on the excerpt from Rocha, this Thesis identifies the need to motivate the economic development idea given the current needs of both clusters.

As previously stated, the emphasis preferred is on economic development because one of the embedded goals of this work is to foster ideas for innovation in the agricultural clusters in Mendoza. In addition, this Thesis considers changes in technology, upgrading /development, as well as changes in behavior, growing cooperation / stronger networks, to be extremely important challenges ahead for the two clusters to take on.

From a preliminary overview of both clusters, it is reasonable to suggest that many factors could help these agricultural clusters overcome the impact of internal and external influences and enable competitiveness and innovation. In fact, one of those crucial factors is to cultivate the ability to defeat threats through enhancing internal strengths.

For all the reasons earlier mentioned in this chapter, I found fundamental to conduct a deeper analysis of the chosen topics through the research questions presented in the following subchapter.

1.2.2 Research questions

The research questions conducting the investigative part of this Thesis are intrinsically related to the previously defined objectives and outline the core of this work. In this subchapter, three research questions are presented. Each one of the questions describes a different phase into the research while obeying a sequential order. In fact, all of the questions are interrelated with one another. The topics selected in the research questions are considered to be highly relevant and applicable to the purpose of this study. Moreover, the examination of the questions can provide interesting points previously unexplored in the context of the agricultural clusters in Mendoza. Finally, important aspects of the research are discussed below so as to guide the reader to a better understanding of the purpose of each research question.

This thesis addresses the following research questions that draw from the objectives of this Thesis:

- 1) How do five specific drivers shape the dynamics of the wine and olive oil clusters in Mendoza, Argentina?

The five drivers to be measured in this research question are economic, political, social, educational and innovational. This question seeks to identify how the dynamics of the wine and olive oil clusters are shaped by these five main drivers. The mentioned drivers were chosen since they represent the most common general factors that can influence the operations of any cluster, company or industry sector in general.

Recognizing the drivers' impact in the dynamics of the two agricultural clusters here studied can provide useful information and help create awareness among the clusters' members. In practice, interviews and questionnaires make it possible to obtain relevant information that, once analyzed, will bring clear answers to this research question and will help clusters' members perceive the forces that influence their activities. When cluster members are aware of the factors influencing their sector is likely for changes and adaptations to take place. The previously said together with other strategic steps, in time, could facilitate the achievement of sustainable competitiveness. This is one of the main ideas to be analyzed in this first research question.

To better understand the outline of this particular research question Figure 2 is presented below. In the figure is possible to see five different colored circles representing the five drivers shaping the activities of the olive oil and wine clusters. The circle in the center represents the two agricultural clusters. Additionally, the arrows explicitly symbolize the influencing impact that the five drivers have in the clusters.

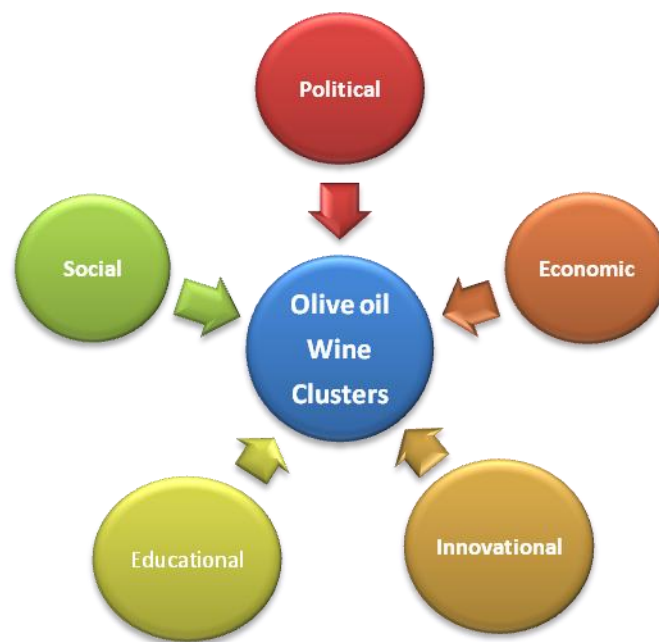


Figure 2: Drivers influencing dynamics of agricultural clusters

This first research question departs from the idea that each one of the drivers above pictured has a pressure effect that can shape the operations of both clusters. The political, social and economic drivers can directly impact the activities of the agricultural sector since they are embedded in the context of these clusters. Some practical examples of these impacts could be the political driver imposing provincial policies such as tax cuts or exporting fees, the social driver impacting in case of lack of communication and cooperation between members of the clusters and the economic driver influencing through the globalization of the markets.

What is more, the innovational and educational drivers can also put pressure on clusters. On the one hand, the pressure imposed by the innovational driver could be related to the constant necessity of pursuing improvement at every stage of the production keeping a

high standard level at any cost to override competitors. On the other hand, the pressure of the educational driver could translate into, not only the need for providing education to cluster members, but also into the requisite for recruiting workers with knowledge and specialization in the industries of wine and olive oil respectively.

The practical examples provided previously show how the drivers measured in this particular question could impact the agricultural clusters. However, is worth mentioning that those examples might not be the same found in the case of the agricultural clusters in Mendoza. The real impact of these drivers into the wine and olive oil clusters studied will be part of the findings and discussion derived from this research.

- 2) How does a top-down or bottom-up approach to cluster implementation influence the dynamics of the two agricultural clusters in Mendoza, Argentina?

The goal with this question is to recognize the magnitude of impact that a public or private-driven approach, namely top-down and bottom-up, had in the dynamics of the wine and olive oil clusters. More specifically, this question finds answers to how either approach has influenced the activities of these clusters from their implementation to their actual situation. However, that a different approach to cluster implementation did influenced the dynamics of the wine and olive oil clusters is not an assumption per se on this research. In light of this, the results reflecting the reality of these clusters will be part of the findings on this paper.

When preparing this question, special consideration was given to the fact that both agricultural clusters have been implemented through different approaches. Although their founding was not purely governmental or private, is possible to verify that the olive oil cluster emerged from a top-down approach and the wine cluster from a bottom-up approach. Having knowledge of this beforehand, allowed me as the researcher to better focus in the differences of development that both clusters exhibit today.

The idea through interviews and questionnaires is to find out whether the members of these clusters opinion are that a bottom-up or top-down approach has had any influence in the dynamics of their activities. This research supports the idea that the implications

of each approach to cluster implementation must be carefully analyzed to avoid situations where either the government or the private sectors solely are deciding on behalf of the clusters. It is therefore important to identify through this research question who are the main players and decision makers on the wine and olive oil clusters.

Figure 3 below offers a clear graphic representation of what this second research question is aiming to analyze. In the figure it is possible to see on the one hand, a red arrow, top down, representing the type of implementation exercised by the public sector, or government. On the other hand, the green arrow, bottom-up, is representing the implementation exercised by the private sector, or private companies/ entrepreneurs.

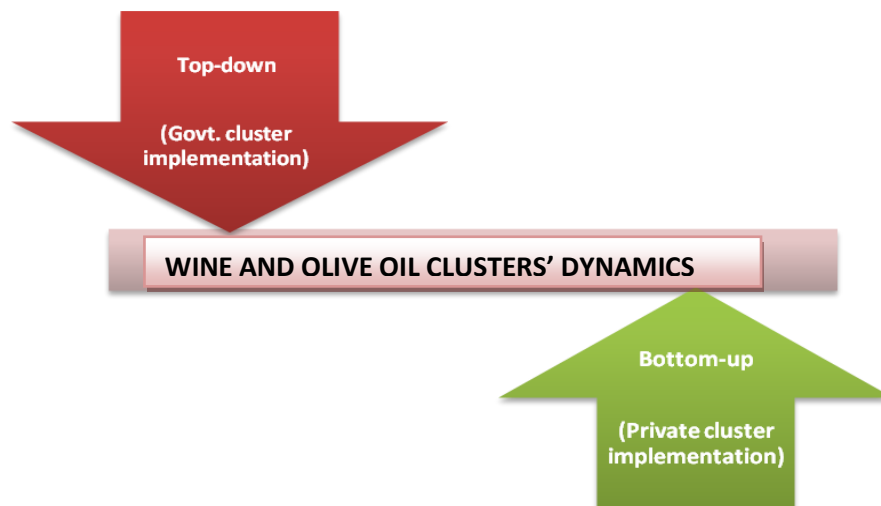


Figure 3: Influence of top-down and Bottom-up approaches in clusters' dynamics

It is worth noting that both approaches to clusters' implementation differ to a significant extent. Therefore, this particular research question is seeking to identify the distinctive influence that the public sector and private sector approaches have in the olive oil and wine clusters particularly.

By no means is implied in this research question that the influence of the top-down or bottom-up approaches is negative. It is understood that the influence can also be positive. Nevertheless, it is assumed in this work that whether the influence is positive or negative the right balance of cooperation and supervision between private and public should be present to ensure successful strategies to build competitiveness. Moreover,

information about the equilibrium between public and private in the governance of the clusters in Mendoza it is expected to emerge from this research question too.

- 3) How can the wine and olive oil clusters moderate the influence of the political and economic external factors?
- ↳ How can innovation contribute to minimize the political and economic external factors?

This last research question is followed by a sub question that helps to underline the focus on innovation. The first stage is here to examine how it is possible for the wine and olive oil clusters to moderate the influence that two common external factors have into their activities. By taking a look at the current world business scenario, it seems obvious that political and economic external factors do affect the operations of companies in every country. Certainly, the wine and olive oil clusters do not escape from this reality. The sub question takes a step forward and seeks to highlight the key role of innovation to minimize these external factors.

A graphic representation of the main research question is shown below in Figure 4.

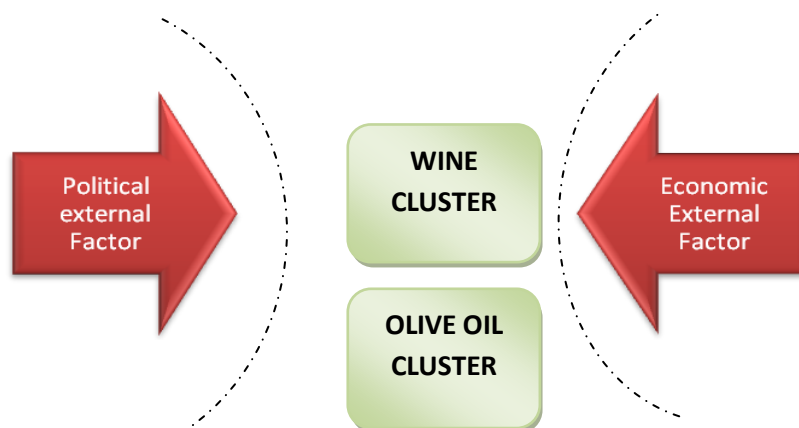


Figure 4: Wine and olive oil clusters moderating the influence of external factors

Figure 4 shows the wine and the olive oil clusters in the center. The two arrows pointing to the center represent the political and economic external factors influencing the clusters, and the dotted curves symbolize the shield effect that the wine and olive oil clusters can use towards the two external factors.

Where certain productive sectors are highly vulnerable to political and economic external factors, it is important that innovative ideas emerge to minimize the impact of these factors. In fact, innovation is undoubtedly today one of the most powerful strategies that any industrial sector can use if it wishes to retain customers, win new market segments or internationalize its activities.

External factors are understood in this question, as the political and economic factors outside the clusters, this includes not only national but also provincial political and economic factors. The activities of both wine and olive oil clusters in Mendoza are directly and indirectly affected when changes in the economy or politics of the Nation or the province occur. Therefore, there is a need to find concrete solutions to avoid situations that can cause erosion in the agricultural sector and deteriorate the dynamic of the clusters.

The idea behind the sub question is to find out how the wine and olive oil clusters in Mendoza can utilize innovation, in all its forms, to confront the changes that may arise with political and economic measures. The assumption is that when innovation becomes the constant goal in the agricultural business, no external influence can hinder the achievement of sustainable development and sustainable competitiveness. Figure 5 below shows a graphic idea of the sub question, with both agricultural clusters utilizing innovation as the force to minimize the effect of political and economic external factors.

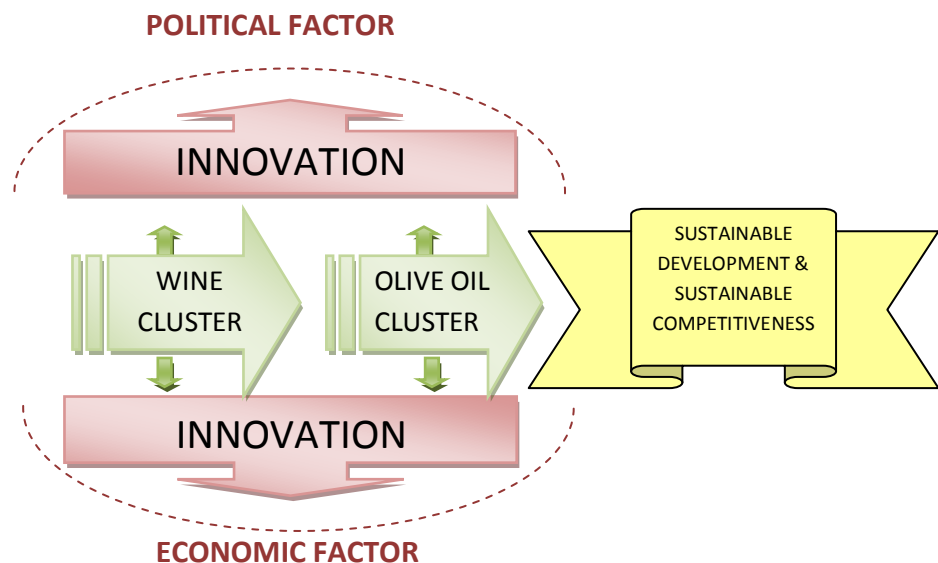


Figure 5: Innovation minimizing effect of political and economic external factors

In the Figure 5 shown above, it is possible to see the wine and olive oil clusters using innovation as a strategy to keep factors from interrupting their way to achieving a sustainable development and sustainable competitiveness. Sustainable development is here on of the goals as it plays an important role especially in the agricultural business. Meeting human needs is what every industry strives for, but preserving at the same time the environment is an exceptional challenge that many businesses must take on seriously. Innovation is indeed one very important tool for the agricultural clusters to also achieve sustainable competitiveness and contribute to the prosperity of their regions. Innovation can, not only drive an industrial sector to become more competitive in local and external markets, but also can help the sector to strengthen its position in such way that external influences signify a minimal risk.

The fact that the wine and olive oil clusters in Mendoza and the entire agricultural sector are affected by certain political and economic measures is unavoidable. One example is the recent years granting of tax deferments to various provinces in Argentina, with the exception of Mendoza, that has created a tense situation of unfair competition. Applied to the idea of this research question, this particular situation, gives an opportunity to think how these two clusters can utilize innovation to surpass the negative effect of external measures such as the tax deferment.

In both, the wine and olive oil clusters in Mendoza there is a clear tendency to create innovative ideas. However, before exploring how these clusters can utilize innovation to minimize external factors is necessary to understand how they value innovation and whether it plays an important role in their strategic plans. Finally, when an answer to this last question has been identified, it will be possible to outline the opportunities for both clusters to strengthen the competitiveness of their industries.

1.3 Paradigm and assumptions of the research

As a researcher it is crucial to define the standing point from where the research will be conducted. This is, to select the paradigm of thought that best adjusts to our inner values and ways we see and understand the world surrounding us. Besides, it is important to

make clear that the choices made during our research are congruent with the chosen paradigm and will follow its path. In light of this, the underlying paradigm guiding this Thesis is interpretive. This angle of study was chosen firstly, because it best adjusts to my personal point of view when it comes to interpreting the reality we observe. Secondly, because it is related to the nature of this particular research, a research within the social sciences field, and thirdly, because it best reflects the intended approach to the analysis of the obtained results.

“Interpretivism is underpinned by the belief that social reality is not objective but highly subjective because it is shaped by our perceptions. The researcher interacts with that being researched because it is impossible to separate what exists in the social world from what is in the researcher’s mind.” (Smith 1983 and Creswell 1994, cited in Collis and Hussey 2009, 57.) This definition of the interpretive paradigm shows part of the position taken in this research. From a practical point of view, this Thesis departs from the assumption that because reality is socially constructed by our perceptions, it is then possible to make changes to that reality.

In this particular case study, when analyzing the situation of the olive oil and wine clusters in Mendoza, the assumption made could be translated into both clusters taking the initiative to overcome possible constraints by utilizing own strengths and capabilities. Moreover, this research includes not only the study of the situation of the wine and olive oil clusters, but also the analysis of the socio-economic and political context of these clusters. The ontological assumption here applied is that it is impossible to separate the surrounding context from the clusters themselves.

Given the compound of reasons that have shaped the actual situation of both agricultural clusters, this research purpose is to study those reasons and create an interpretive understanding of the phenomena surrounding these clusters. “(...) interpretivism focuses on exploring the complexity of social phenomena with a view to gaining interpretive understanding” (Collis & Hussey 2009, 57). Among the reasons why this research was undertaken was to identify the factors that influence both agricultural clusters. When influencing factors are determined, a deeper understanding of the

phenomena will arise and from the interpretation of the research findings new considerations to the problematic could be introduced.

In an interpretive paradigm “the researcher adopts the view that there are not fixed truths. Instead, reality (or a researcher’s idiosyncratic view of what actually constitutes reality) and meaning are dependent on many factors, including time; space; the views of the person concerned; and language and symbols that researchers use to describe, explain and understand phenomena” (Maare & Van der Westhuizen 2009, 20.) As here explained, is fair to conclude that the reality of both agricultural clusters in Mendoza could be interpreted in various ways if the same type of research were conducted by different researchers.

It is undeniable that the preconceptions and values of a researcher are an important factor to take into consideration during the analysis of data gathered in a research. However, the departing point in this Thesis is not to ignore the fact that these preconceptions exist, but rather to transform these values into generators of original perspectives, that following an inductive path, could create new theories or expand present ones.

1.4 Thesis structure

Following the introductory chapter 1 where a summary of the objectives, background, research questions, paradigm and findings of this Thesis are presented, chapter 2 starts by describing the geographical context of the research and introducing separately the two case studies pertaining to this Thesis. On chapter 3 the methodology utilized in the research part of this Thesis is detailed. Chapter 4 focuses on the concept of business clusters and offers a precise and simple description of Michael Porter’s point of view in regards to clusters, as well as an outlook on the history of clusters in Argentina. On chapter 5 a review of the Thesis main findings and analysis of the data collected during the research part is presented. Besides, a discussion is opened inviting to further analysis. Lastly, chapter 6 brings the final thoughts and concluding words to this Thesis.

2 CASE STUDY INTRODUCTION

This chapter begins by introducing the geographical context of the case study so as to position the reader into the real setting surrounding the wine and olive oil clusters in Mendoza. Following the context introduction, a brief glance at the olive history in Argentina is presented to offer interesting background information that facilitates the understanding of the olive not only as a product but as an important industrial sector. Furthermore, each cluster is presented separately and an outline of their main characteristics is introduced to help the reader comprehend the actual situation that surrounds the clusters.

2.1 Mendoza as the research context

To be able to grasp the situation of the wine and olive oil clusters in Mendoza, it is necessary to start by taking a glance at the geographical context that surrounds them. Describing the distinctive points that makes Mendoza a unique place for agricultural businesses will demonstrate the importance to preserve the industries that have brought prosperity to the region over time.

The following Figure 6 contains two different pictures. The first one, on the left side, shows a map of the Republic of Argentina with the province of Mendoza colored in red, and the second picture, on the right side, presents an augmented image of the province with the name of its main districts.

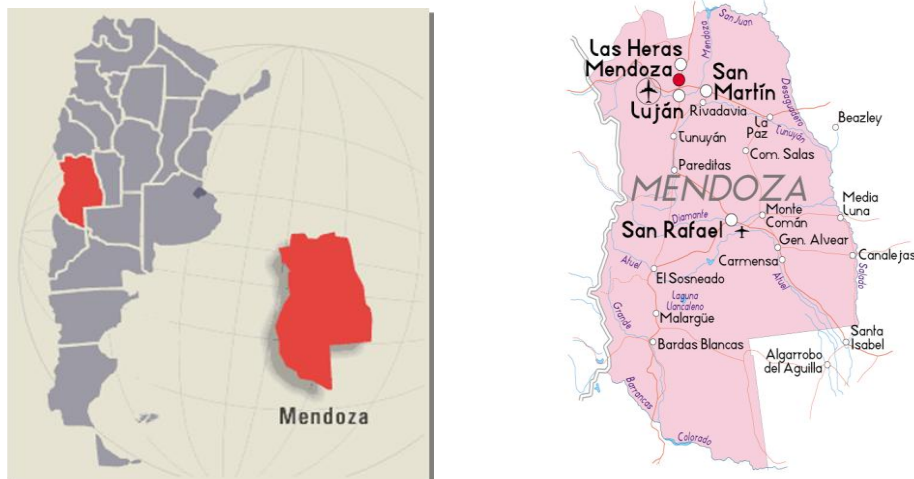


Figure 6: Map of Argentina (left) and Mendoza province (right)

Mendoza, one of the twenty three provinces in the Republic of Argentina, is situated in the mid-western side of the country and at the feet of the Andes mountain range. Known as “La tierra del sol y del buen vino”, the land of the sun and the good wine, Mendoza is widely recognized for its fertile lands, breathtaking landscapes and endless touristic attractions. Yet, what Mendoza most prides itself about is for having one of the most thriving wine industries in the region. Wines from Mendoza have reached popularity not only in Latin America but around the world.

Mendoza with its long history of wine making is today the world’s fifth largest wine producer. In the mid 1500’s, the Spanish settlers who first came to Argentina brought their vines and years later, Italians and French, who arrived with the great immigration wave to the continent, did the same. It was so that the winemaking tradition was born in Argentina. What is more, the first School of Agriculture was founded in Mendoza in 1853 where it was taught the European models of winemaking (Richard-Jorba & Perez Romagnoli & Barrio & Sanjurjo 2006).

Below, Figure 7 shows the main districts for wine production in Mendoza called oasis.



Figure 7: Main oasis of wine production throughout Mendoza

Mendoza possesses many geographically favorable conditions that are not only suitable for the wine industry but also for the development of other agricultural businesses. One example of this, shown in the Figure 7 above, is The Valle de Uco (Uco Valley) located 900 to 1200 above sea level. This particular region known for the big concentration of

wine industries here found, offers excellent conditions for growing grapes and other products like apples and pears. Some of the beneficial characteristics of the region are minimal precipitations, controllable mountain snowmelt, irrigation from the Andes Mountains and almost constant sunshine with cool nights.

In the past, a perfect geographical setting and unbeatable conditions for agriculture have naturally attracted to this region many family businesses' based on agriculture. Nowadays, agricultural firms of all sizes can be found in the province of Mendoza. Although the wine and olive industry have been traditionally the most prosperous in the territory, other industries in the agriculture sector such as the dried plum, tomato, potato and cherry have been thriving over the years. The success of these industries has not only been based on the internal market but also in the exporting market.

Another central point continuously attracting industries to the province of Mendoza, is the important flow of investment that the province has received, both from the public and private sectors. This economic help transformed the agriculture sector in one the most advanced in the country. In fact, many foreign journalists, sommeliers and expert guests visit the province every year interested in knowing more about the production of some of the main wine brands. Additionally, this investment is translated to the enhancement of infrastructure and improvement of productivity created, for example, by different cluster programs implemented throughout the province.

One interesting point, and not of a less importance, is the historical influence that European settlers have had in Mendoza. Their contribution of know-how, techniques and machinery has paved the way to the prosperity that the agricultural sector enjoys nowadays. To summarize, strong agricultural heritage, wide flow of investments, positive reputation around the world and exact conditions for agriculture are the main characteristics that make Mendoza so popular place for agribusiness.

2.2 A glance at the olive history in Argentina

It is good to start with a brief history of the olive in Argentina to contribute to a better understanding of the longevity of the product and the important economic development that it has brought to some regions. Moreover, the olive is the core product of one of the clusters examined in this Thesis and hence another reason for exploring its history in Argentina. It is said that the first olive plants were introduced to Argentina in the 16th century but there are different versions on how they were brought to the country. Some historians claim that they were carried by Spaniards and others sustain that the first plants could have been rooted in the province of Santiago del Estero, a province of Argentina which city was founded by conquerors coming from the Upper Peru, nowadays known as Bolivia.

According to historical documents, King Charles III of Spain ordered to cut down all the olive groves from Upper Peru to Rio de la Plata in Argentina, fearing that they would compete with the plantations in Spain. In that episode, only one plant survived in the province of La Rioja in Argentina. This plant was protected and multiplied later on to other Argentinean provinces and countries like Chile and Peru. This multiplication gave birth to a characteristic Argentinean olive variety called Arauco. Below, a picture of the ancient olive tree that survived.



Figure 8: Ancient olive tree in the province of La Rioja

It is worth mentioning that this historical tree still exists in the province of La Rioja in Argentina and although this giant has more than five hundred years of age, still produces more than one hundred kilos of olives every year (INTA 2007, 3).

In the seventies, there was a worldwide campaign against the use of olive oil as it was considered to be harmful to humans' health. This unleashed a deep crisis in the olive oil sector that lasted more than twenty years. In the nineties, the production started moving and the province of Mendoza became the main producer of olive oil with about 70% of the market share and 60% of the table olives share. In 1992, the business scenario further changed and the demand for olive oil begun to grow also worldwide.

Additionally, different measures were taken nationally in order to promote industrial and agriculture sectors. One of these measures was the possibility given to some provinces to delay the payment of national taxes (tax deferment). Another measure was the one of industrial promotion in which some provinces were benefited with attractive policies to engage investors to establish their business in their region.

The information here used, based on documents from the INTA (National Institute for Agriculture and Livestock Industry), shows the long history of the olive in Argentina. From the almost accidental survival of the first plant to the economic transformation of the province of Mendoza and the internationalization of the product, the olive history in Argentina is just an example how a product can heighten and open opportunities for a region. New business strategies play today an important role in the olive sector and the need for a collective effort to continue to develop the industry has materialized in to the olive oil cluster. In the following subchapter, the actual situation of the olive oil cluster is presented.

2.3 The Olive Oil cluster

Back in 2004, the Inter-American Development Bank, BID from now on, largest source of financing for Latin-America and the Caribbean, was outlining a programme for productive development and territorial competitiveness for the Province of Mendoza. In light of this, the government of Mendoza was starting a project for the promoting of value chains also to be funded by the BID. The BID has then asked a consulting company to perform an analysis and identification of each cluster in the province with the idea to determine the main economic activities and especially those which were clusterized.

Initially, nineteen clusters from different fields were identified, but only nine of them were explicitly considered to take part in the subprogram for cluster promotion of the government of Mendoza. Four food and agriculture, three industry and service and two tourism based clusters were selected. This thesis is focused in two different clusters, one of them is the olive oil cluster which is part of the Mendoza's cluster subprogram initiative and the other is the wine cluster, a big conglomerate of wine producers, independent from the governmental initiative funded by the BID.

The wine cluster has also been analyzed in 2004 by the same consulting company that mapped out the clusters for the BID since it represents a significant part of the economic activity of the province. After the initial consultation, the province of Mendoza started the Sub programme for Cluster Promotion which still today has as objective to increase the competitiveness of the value chains by supporting the business development processes and articulation of clusters' members. In the framework of this Sub programme is that olive oil cluster is situated.

A few years later, in 2007, a consortium of consulting companies, IGT consulting, ETG Economic Transformation Group and FUNDES performed an analysis of each specifically identified cluster and presented the results to the Ministry of agriculture and livestock of the Province of Mendoza. The purpose of the analysis was to offer a diagnosis outlining the situation and challenges to be confronted by each selected cluster. The consortium took a holistic approach and suggested different steps along with some cultural changes.

In the analysis it was primarily identified and highlighted that the business mentality in Latin America is rather individualistic and does not prioritize the common good. Needless to say, this represents an important challenge to overcome when it comes to working within a cluster model. Therefore, it was stressed the fact that previous examples of clusters around the world should be taken as a reference for good practice but not as models to follow since the reality and context of clusters in Mendoza have very different components.

An interesting point made in the analysis of the consortium was that of the cultural changes needed in Mendoza. Five cultural changes were then suggested, and here a summary of the main points outlined is presented:

1st cultural change: Focus on the facilitating role of the public institutions.

Government must understand that those who export are the firms and not the public sector and offer resources for financing and support in all levels.

2nd cultural change: The creation of wealth as a desirable virtue

Historically, in Latin America, the firms search for wealth has been regarded as dishonest by the public sector. Bad past experiences with companies and business men have led to an increasing mistrust. Progressing countries learnt to value the capacity for innovation not only individually but also collectively.

3rd cultural change: A culture of global businesses

To create wealth is needed to focus in global markets. It is needed for business men to get to know different global markets such as, Tokyo, Paris, New Delhi and not only Brasilia or Miami. The public sector could support the participation of companies in international fairs and events in order to build up trust relationships with future potential retailers.

4th cultural change: Public-Private collaboration

To develop a province with wider exports it will be impossible unless there is collaboration between these two sectors. Latin America has a long history of mistrusting relationships between the government and firms. It is necessary to build trust bridges between these sectors and learn to collaborate in order to globalize the economy.

5th cultural change: Collaboration and coordination public-public and private-private

There is a need for a better and more coordinated communication between public institutions avoiding the handling of information in isolation from each other. Firms, on the other hand, should understand the benefits that could come from collaboration and the development of productive capacities through clusters.

The previous are general considerations made by the consulting companies on the social, economic, and political context that surrounds the clusters in Mendoza, as well as some wider observations on the similarities commonly found throughout Latin American countries. These observations are crucial since as previously suggested by the consortium, not European, neither Northern American nor Asian cluster examples should be compared to the ones in Latin America. This is of course, due to the specific conditions present in the territory such as political situation, economic scenario and cultural aspects.

Shifting back the focus to the olive oil cluster in Mendoza, one of the main plans that show the innovative mind of the cluster is connected with an initiative for strengthening the competitiveness. This initiative, perhaps the most powerful at this moment in the cluster, has a very concrete project: to establish an olive oil taste panel in Mendoza. This project is at the moment in a refinement stage as much progress has been made, especially when it comes to the infrastructure and building that holds the taste panel's activities.

The entities involved in this project are: the National University of Cuyo - Faculty of Agrarian Sciences of Mendoza, the Foreign Chamber of Commerce of Cuyo, Olive Committee of Mendoza and two small and two big regional producers.

The budget for the Taste Panel was divided between the entities involved in the project and it was shared as follows:

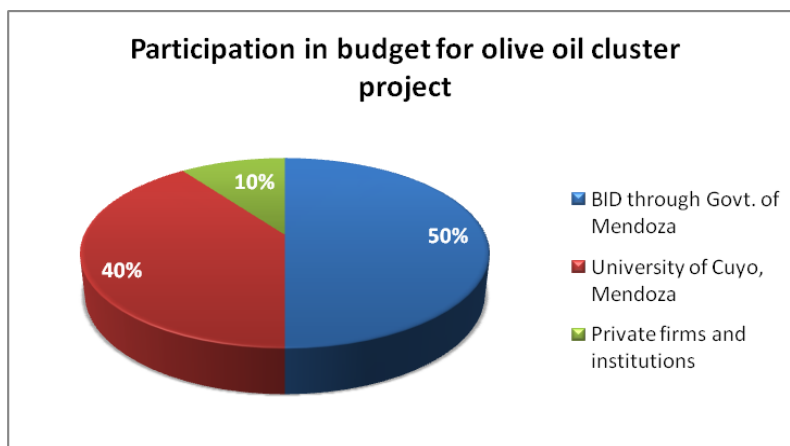


Figure 9: Budget share for the olive oil cluster project in %

In a personal interview made for this research, an Agronomist professor at the University of Cuyo, explained the financing process by saying that “the BID granted only a financial support of the 50% of the total of the project and that meant that the remaining part was to be contributed by the counterpart. From this counterpart, almost the 90% of the remaining 50% was given by our University” and highlighted that “the percentage given by our Faculty included the building of the taste panel in this location, a residential area and therefore expensive, plus the general infrastructure and the personnel since we are University professors and also must work for the project. The University invested a lot in this project to be successful and for it to become part of a community service too” (Araniti 2011.)

One of the aims of the taste panel initiative is to enhance the interaction between producers, manufacturers, consumers and civil organizations. The initiative seeks primarily to gain acknowledgement and the certification from the International Olive Council (COI), the world’s only international intergovernmental organization concentrating in olive oil and table olives with base in Madrid, Spain. The idea behind the creation of a regional taste panel is to determine the characteristics and uniqueness that the olive oil produced in Mendoza possess. Moreover, by acquiring the certification of the International Olive Council (COI) and with its support it will be possible to promote internationally the variety of olive oils from Mendoza with their specific regional characteristics.

The taste panel idea is focused on a long-term vision and will serve as a regional entity with the objective of certifying the quality of the oil samples produced in Mendoza. Additionally, this will help the sector to achieve a greater differentiation respect to other olive oil regions. Other embedded objectives of the taste panel are related to the control of quality, the creation of profiles according to the olive oil’s characteristics and follow-up with the compliance of set regulations. Furthermore, to evaluate and compare oils and mixtures, promote the benefits of the olive oil and collaborate with further research.

Alongside the taste panel initiative there is a project organized by the Faculty of Agrarian Sciences, part of the University of Cuyo in Mendoza, to offer further education related to the world of olive oil. The educational programme will not only

educate expert tasters but also critical consumers that will learn how to differentiate virgin olive oils. Additionally, formation will be given to businessmen about the positive and negative effects of the tasting process. Both initiatives count with the support of public and private institutions such as the University of Cuyo, the Olive Council of Mendoza, the Chamber of Foreign Commerce of Mendoza, producers and firms and the Inter-American Development Bank (BID).

It is important to highlight that these ideas are part of the framework of the olive oil cluster and are mainly carried by volunteer participants. In fact, the responsible for these projects development are two Agronomist Engineers and professors at the University of Cuyo in Mendoza, Mrs. Monica Bauzá and Mrs. Veronica Araniti. These professors have been involved in the study of the olive oil for more than ten years and are carrying out the projects together with a group of technicians and experts in the field.

Despite the fact that these professors spend many hours a day working on the cluster initiatives, neither of them is being paid for doing that job. Instead, they solely receive their regular salaries as university professors. This situation puts sometimes a strain into the development of cluster initiatives but they insist that during their research on olive oil at the university "...had only few resources and scarce methodology. We liked to be involved in the project as it was going to give us some kind of continuity to what we have been doing for years" (Araniti 2011.)

In terms of the business, although there is an increasing demands for olive oil internationally, Mendoza has lost leadership in the production of olive oil and its market share represents only the 30% in Argentina. Other provinces in the north of Argentina have more extensive models of production, with fewer actors and in addition, they have been encouraged by tax deferments. Yet, Mendoza has also many comparative advantages, but the sector presents stagnation signs in the production and a great atomization, this is a market with many players and not clear leaders.

The current situation shows that the firms within the olive oil cluster concentrate their markets in selling high volumes with a low added value. As producers recognized this situation, they became interested in the taste panel project as they saw a possibility to

reach that added value that their products needed. However, the process from the outlining of the project to the realization of the first activities was not a smooth operation. As stated by Professor Araniti in an interview made for this research, “it took a long time until we really understood what the main idea or motivation for this project was (...) It was especially difficult for the remaining participants too, although they were interested in the project, to find out what was that they needed from it” (Araniti 2011.)

The process to get the initiative approved was also a lengthy one. In fact the normal procedure for approval of a cluster initiative through the governmental subprogram of cluster promotion in Mendoza can be quite complex.

The process from the time the idea is presented until it is finally approved is detailed below in Figure 10:

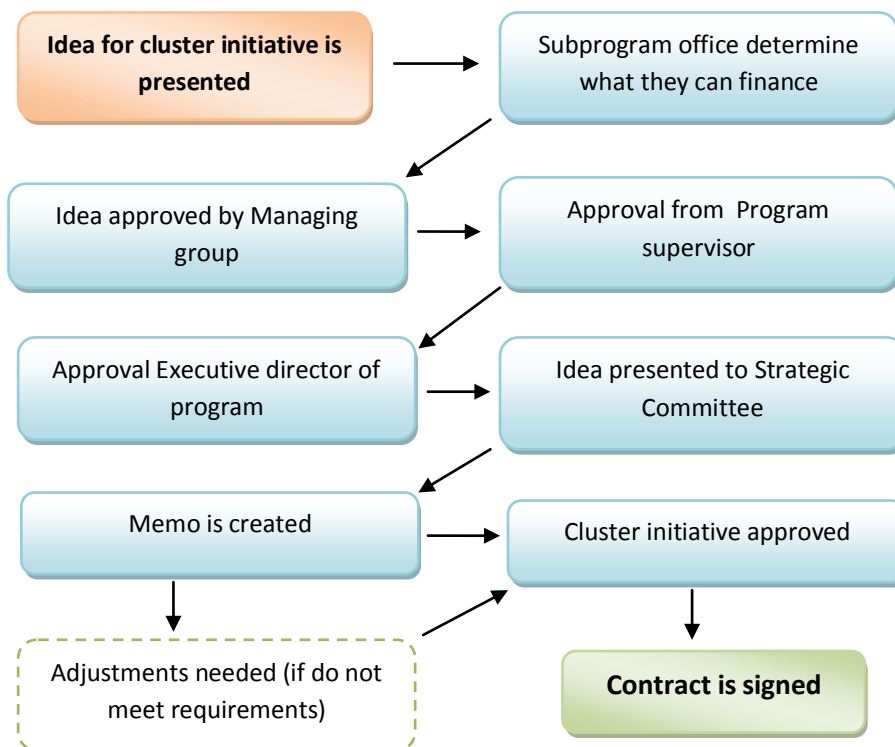


Figure 10: Cluster initiative approval process

As it is clearly shown in Figure 10, the process for approval of a cluster initiative can be quite complex as many steps can delay the development of an idea. Besides, many different actors are involved in the decision making process. This is also a common feature in the business world in Argentina and it is therefore worth exploring how can this process be accelerated. From the standing point of this Thesis is clear that in the current fast moving business scenario, it could be detrimental to sustain this kind of process for approval as quick decisions could save the momentum so valued in business.

When Professors/researchers Bauzá and Araniti started to sketch out the taste panel project they became the natural leaders of a group of experts and amateur participants. Mrs. Bauzá was selected as the influential leader and Mrs. Araniti as the technical leader. Yet, as mentioned before, the organization of the project took a long time as it needed to be approved by the financing authorities and a contract needed to be signed. The process started on 2006 and in 2007 the project was presented to the authorities to be finally approved in 2008. However, since the infrastructure was to be built, the tasting panel did not start its activities until 2010.

During this time, a group of tasters was selected and it is actually integrated by 24 people who come to the University of Cuyo twice a month from different parts of the province to volunteer their senses and help this cluster initiative. In the tasting meetings that usually last about two hours, they work with olive oil samples provided by small local producers who bring their products to be tasted and studied. These tasting volunteers had no previous preparation or expertise in the tasting process and through different sensorial tests the cluster members were able to select the right people to join the panel.

The governmental subprogram for cluster promotion is divided in two stages of 5 years each. The taste panel initiative is reaching now the end of the first stage and has a deadline of 18 months when results from the activities made must be rendered to the authorities of the subprogram and the financing institution. Once the results from the first stage are approved, the second stage of the initiative can be financed. Nevertheless,

this second part of the subprogram is to be negotiated by the BID and the provincial government of Mendoza.

Both initiatives, the taste panel and the educational project show the interest and dynamism of the olive oil cluster members to take their products and sector forward. This is without a doubt a good sign when it comes to achieve sustainable competitiveness. However, it is critical to understand the limitations as well as the opportunities for this particular agricultural sector. As explained by an agronomist and wine producer from Mendoza “(...) the European olive oil is subsidized and so the international price for olive oil is very low” (Sejanovich 2011). Yet, despite economic factors not beneficial to the cluster, there are opportunities in strategic market selection and innovation to be achieved.

Recently, a private company focused on the development of Agro industrial projects from Mendoza, Alma Cuyana S.A. launched an attractive new product. Through its commercial label Cuna de Olivares (olives' cradle) they presented a product called OliKids®. This extra virgin olive oil is especially thought for kid's consumption as its mild flavor and low acidity expects to attract many families to try it, even for baby food.

Although Olikids ® is not the world's first olive oil for kids, it is the first of its kind in Latin America. An attractive packaging and lively website accompanied the launching of the product and a specific target market is the aim of the company. This good example comes to point out how the firms within the olive oil cluster can utilize innovation as a way to transcend economic barriers and gain international recognition.

Even though the olive oil cluster has many positive features and a great potential is necessary to highlight that is a very young cluster and more time is needed in order to further develop skills and the overall capacity of it. Besides, it is still today a weakly organized cluster and this is attached to the fact that trust between members must be encouraged. In this point, the role of the government is crucial.

2.4 The Wine Cluster

Before focusing on the wine cluster's actual situation is essential to understand the important milestones that the wine sector in Mendoza has gone through. This understanding will provide a holistic view of the progress made and the challenges ahead for this productive sector. The wine sector has a long history in Argentina and particularly in Mendoza with first developments dating back to the XVI century. Nevertheless and for the purpose of this work, only the most significant events that impacted the sector from the 1980's will be briefly explored.

After years of a sustained growth, in the 80's the wine sector in Argentina suffered a serious crisis. This crisis, based on the over production of basic wines, push the prices below the costs causing a generalized closure of wineries, difficulties in the primary production and financial problems to the regional banks who had financed the sector's activities. In addition, the wine sector was facing continuous government intervention in the market with imposed regulations and restrictions to the offer. These government measurements, although set with the intention to help the sector, were deepening the crisis.

Yet, the situation affecting the sector was not only related to regional or national policies but there were also changes taking place in the consumer behavior worldwide. The consumer demands were changing and the wine sector in Argentina, and especially in Mendoza, realized that the profile of the consumer they have been serving for years had changed. The new consumer was younger, with a better economic position, demanding a higher quality and variety of wines at consumer friendly prices. It was then clear the urgent need to find a new model to get out of the crisis.

Towards 1990 the wine sector suffered a transformation that would change their until then business model. The traditional wine producing countries in Europe, France, Italy and Spain began to lose big portions of their market due to the increasing competition imposed by new countries producing wine. With a model developed by the Davis University in California, USA, and with examples from the world famous wine producing region Napa Valley, the United States initiated a group known as the New

World Wines. This group was lead by Australia and followed by Chile, Argentina, South Africa and New Zealand.

During the 90's the wine sector in Argentina took a spectacular turn and although the local demand was still weak, the exporting opportunities were increasing at a fast pace and the Argentinean wines gained recognition in new markets worldwide. A globalized market and a reduction of wine consumption in the traditional wine producing countries contributed to the rapid expansion and acceptance of the concept of New World Wines. The idea behind the concept of New World Wines was to offer fruity wines, from specified varietals, with a good relationship price-quality and easily adaptable to the young consumers palate.

In the 90's Argentina was enjoying of a period of economic stability and the deregulation of the economic activity presented new opportunities for the wine sector. Important technological developments took place in the wine industry of Mendoza as well as a significant investment of capital that contributed to a sustainable growth of the sector. With a growing demand for exporting, the wine industry in Mendoza quickly realized that the key was to have an organized sector. More specifically, there was a need to start a strategic change by restructuring the activity of the sector entirely.

Yet, the changes occurred in Mendoza were not only related to technology but also to the relationship between actors within the same industry. A growing cooperation between farmers, winemakers and providers emerged almost naturally facilitating the main goal of exporting successfully. Initially, many winemakers joined Bodegas de Argentina, wineries of Argentina, an association that groups more than 180 wineries of all sizes throughout the country and that is focused on promoting cooperation between winemakers.

It is important to point out that these winemakers were highly innovative as they were aware of the latest world tendencies and their wineries counted with skillful professionals such as Agronomists, Engineers and Enologists. During the crisis of the 80's, many wine producers decided to travel abroad to gain knowledge and expertise about the trends and techniques utilized worldwide. Exactly as in the past when their

ancestors developed in Mendoza the first wineries utilizing ideas and technologies they brought from Europe, the new generations of winemakers were interested in foreign markets to observe the models that could be applied in their businesses.

Another great opportunity for the wine sector came after the economic crisis of 2001 in Argentina. Despite the turmoil, the wine industry was greatly benefited since the devaluation of the Argentinean currency enabled the winemakers to export their wines at lower and more competitive prices than their worldwide competitors. Most of the wineries in Mendoza were able to grow rapidly due to the large exports at lower prices and the technological preparation of their facilities. Besides, the knowledge and expertise of the Enologists and wine experts helping the sector was crucial.

The overall scenario of change and rapid development was the right fit for the emergence of what is known today as the wine cluster of Mendoza. There was an atomized yet strong offer from diverse wineries, the social capital was developing rapidly and there was an economic stability that allowed capital investment and technological advancement. All of these conditions enabled the natural formation of a strong wine cluster in Mendoza. The integration in the cluster is today not only vertical with farmers, providers and wine producers but also horizontal with a wide cooperation between wineries.

Between 1800 and 1930's the majority of wineries in Mendoza were family owned and enjoyed of a stable success until the crisis of the 80's. The wineries were mainly owned by immigrant families from Italy and Spain who settled in Mendoza to start their own farming businesses and carried with them the Mediterranean tradition of wine drinking. There are still today in Mendoza family owned wineries that enjoy of an extraordinary success due to the fact that they have wisely adapted their production to trends and conditions of both local and external markets.

Some of the most popular family owned wineries pride themselves of this long family tradition and embrace it in their wine labels, as shown in some examples below:



Figure 11: Wine labels from family owned wineries in Mendoza

Because of turbulent times in the 80's, many traditional wineries were pushed to sell their businesses to investors and those who survived the crisis grew steadily by making changes to their strategies. To reinforce the sector and fight the crisis, the wineries in Mendoza were forced to restructure their vines, widen the varieties, reduce the production and prioritize quality to quantity.

Nevertheless, innovation and technology were not the only challenges for the sector. In the 90's, Argentina was not widely known for being a producer of world class fine wines and was usually overshadowed by traditional producers such as France, Italy or Spain. It became crucial to start a worldwide marketing promoting the wines from Argentina.

Nowadays, different wineries within the cluster participate from international fairs and expositions marketing their products and sharing expenses when it comes to carry out activities overseas. Being part of a cluster has proved to be beneficial for many wineries in Mendoza since a flowing interaction between members facilitates communication and the use of new opportunities for the industry sector. Throughout the years, the wine sector realized that it was important to create an environment of trust between members if the sector was to overcome a fierce competition from the traditional winemaking countries and constantly changing trends.

It is worth noting that the wine cluster in Mendoza is not new and therefore it has gone through different phases of adjustments and development over the years. In fact, in the wine cluster today there are third and fourth generations of families working in the industry, witnessing how the sector has matured. The internationalization of the sector has promoted innovation since producers had the chance to visit other countries and observe the technology and solutions that could be implemented in their wineries. Advances in technology were crucial to be able to meet the requirements of not only local consumers but also foreign ones.

The wine sector in Mendoza plays an important role in the economy of the province and its exports represent the 41% of the total provincial exports. In Argentina there are more than 1300 wineries and about 80% of them are located in Mendoza. There are more than 1500 service and equipment providers and approximately 40 thousand independent grape producers. In addition, the most prominent universities in Argentina specialized in viticulture and Enology placed their headquarters in Mendoza.

In terms of research, several institutions such as INTA (national institute of agricultural industry) and INTI (national institute of industrial technology) actively collaborate with the private sector. When comes to promotion, public-private entities such as ProMendoza and Eurocentro help companies, especially small ones, through their internationalization process and competitiveness development. The wide network of institutions and associations supporting the wine sector is one of the reasons behind the success and strength of the Mendoza wine cluster.

Furthermore, the wine industry in Mendoza mobilizes other industry sectors such as glass, graphic design, paper, metal mechanic, logistics and tourism. The synchronicity of collaboration with these sectors is what ultimately gives life to the wine cluster. This cooperation of industries benefits not only the economy of the wine sector, but mainly the economy of the province by sustaining existing businesses and creating jobs. One example is the wine cluster of Mendoza working closely with the tourism industry to develop initiatives that benefit both sectors. One example of this is the nowadays very popular touristic attraction Ruta del vino, Wine route, where tourists can visit different wineries and taste the products.

When it comes to the cluster structure, Wines of Argentina, WOA from now on, is the main organization responsible for the wine cluster in Mendoza as well as other provinces. This organization groups more than 200 wineries with the objective to promote the Argentine wine industry. It is also through this organization that the majority of the cluster initiatives emerge. WOA is supported by several institutions and entities in Mendoza and promotional activities such as fairs, workshops and tours take place worldwide and within the program of this organization. The main idea of WOA is to help producers and wineries achieve a good flow of communication between partners and market leaders.

In the frame of WOA, many projects are designed to aid the wine sector and its actors. One particularly interesting initiative is the Plan estratégico Argentina vitivinícola 2020, Strategic plan viticultural Argentina 2020. The plan was launched in 2004 and funded by the Fondo vitivinícola de Mendoza, Mendoza wine fund. This strategic plan aims to define specific steps to develop the regional economy and help the wine sector to gain a stronger position globally. Additionally, the rooted idea of the plan is to create value through the organization and integration of actors in the chain of wine production.

The strategic plan viticultural Argentina 2020 was presented through the Corporación Vitivinícola de Argentina, Argentinean Viticulture Corporation (COVIAR), a public-private entity that unites different associations, chambers of commerce, institutes, unions and provincial governments. The plan is to create a network platform that will include both public and private actors with the objective of developing strategic actions. Some of the main strategies to be achieved are:

1. To install and consolidate the Argentinean wine image globally
2. To reach industrial innovation
3. To have an organized industry
4. To further integrate producers
5. To achieve commercial goals set

Besides this main project, the wine cluster is surrounded by many initiatives emerging from the wine cluster members and to be executed by different entities. While some

entities focus their projects in developing the communication of the wine sector, others look for strategies to promote wines in certain markets, consolidate the wine tourism in Mendoza, transfer knowledge and expertise throughout the value chain or develop strategies for international negotiation.

The Mendoza wine fund carries every year the Cycle of wine and food & wine tasting. Through this initiative, courses prepared by renowned sommeliers are dictated with the purpose to introduce amateur wine lovers to the Argentinean feeling for wine. People attending these courses can taste different wines and savor traditional specialties such as the regional olive oil and cheese.

The Argentinean viticulture corporation is also interested in promoting the wines from Mendoza and for that purpose invites frequently international journalists. These journalists visit the wineries and taste the products and in exchange they write articles in international wine magazines and journals. This offers a relatively inexpensive way of promoting the Mendoza wines obtaining a priceless global publicity.

To judge from the variety of initiatives currently present in the wine cluster is fair to say that the sector has come a long way despite difficult times. The wine sector is regarded as an example of success and cooperation and its positive image is reflected to other industrial sectors. However, the wine cluster is still confronted by the fact that the wine business in Argentina is currently not as profitable as it could be. On the one hand, the internal rate of return of the sector is lower than 10% annually, making the sector less attractive for investors or new start-ups. On the other hand, the current escalating inflation rate in Argentina is also affecting the wine sector and the profitability of the industry.

The idea of increasing the exports and expanding the markets in the USA for example, although attractive, imposes new challenges to the wine sector. A larger demand from a big country like USA requires bigger financing and is there where the role played by Argentinean banks becomes the key. A growing demand in exporting is difficult to finance in Argentina as banks are not ready for such scale of financing. Moreover, to increase production without compromising quality is another big challenge for the

industry. Additionally, the constant instability of the economy of Argentina has put a strain into the so needed foreign investment.

The actual situation in the wine industry in Argentina and worldwide is complicated as changes occur more rapidly and economies are faced by economic uncertainty. The main partners and target markets for Argentinean wines like USA and UK are going through economic turmoil and therefore the amount of exports to these countries are expected to reduce drastically. Nationally, although the wine is quickly gaining space in the consumers' demand, the beer industry continues to be the biggest competitor for the sector.

In a recent article from the popular Argentinean newspaper *Diario Clarín*, another situation affecting the wine sector was reflected, the lack of workers during the harvesting season. Although there is a large demand of workers for grape picking since one worker is needed per eight hectares of vineyard, there is a shortage of working hands. Despite the fact that there is a significant number of unemployed people in Mendoza, the wine industry finds hard to attract people to work in farming duties.

The reasons behind this problematic are several. On the one hand, there is a social plan established by the current national government to help families with low resources by guaranteeing them a minimum salary. This plan discourages families as well as young people from working in farms. On the other hand, the traditional job of grape picking has no longer continuity as young generations are not interested in following their parents' steps and in addition, child labor has been completely banned from this sector.

The measurements of the current government to eradicate exploitation of farm workers have in some way changed the dynamic of the sector. Each winery needs approximately 350 to 500 people to harvest their vineyards. Some harvesting is done mechanically, but the majority of wineries still prefer their grapes to be picked manually. Despite the efforts of the wineries to better the conditions and payment of their grape pickers, the truth is that 70 percent of the wineries in Mendoza are of a small or a medium size and have a limited budget. By now the harvesting of vineyards in Mendoza is mainly in the

hands of immigrant workers from Bolivia who come to the province in search of the temporary work they cannot find in their country.

All of the situations previously described are critical to the wine cluster of Mendoza and in spite of the great success achieved by the wine industry so far, these issues must be solved rather sooner than later. The innovativeness of the sector could be one of the key elements to help the wine cluster through internal and external threats. Yet another important factor is the further integration of members in the wine cluster. The atomized offer of wineries currently existing, although positive to the market, is perhaps not sustainable in a long run when new challenges are to be confronted.

The virtue of the wine cluster in Mendoza is that not only it has positioned Argentinean wines globally competing with bigger leaders, but also that it has pulled with hard job a business where the financing is scarce. The wine cluster was able to surpass the crisis in the sector by adapting to the demands of distributors worldwide. The actual trend is on the diversification of the portfolio of wines offered and the wine cluster of Mendoza is aiming to achieve continuous innovation.

The business of winemaking in Argentina and especially in Mendoza, has a deep rooted meaning for those families with many generations in the same industry. The motivation to push forward the sector is not only based on the economical gaining that the business derives but it is rather based on inherent values shared and treasured throughout time. The values cherished in Argentina such as sharing moments with friends and family represent a philosophy of life that is worth transmitting through a product like wine.

Despite the many goals already achieved, the wine cluster has still to overcome the economic turmoil affecting the majority of its main markets. The skillfulness of the cluster, knowledge based on past crisis and innovativeness of ideas will determine the development or stagnation of the sector. Nevertheless, the main challenge ahead for the wine cluster is perhaps successfully transmitting the historical value that the wine in Mendoza has and that has become the identity of not only the province but of Argentina. Product differentiation is fundamental in the heavily competitive global wine market.

3 METHODOLOGY

In this chapter are introduced and explained the arguments that led to the selection of a particular method for the research and collection of information. Moreover, the way this information was scrutinized to create validity of the research is also discussed. Firstly, the type of research and purpose of it is presented. Secondly, the research strategy used and techniques for data collection are introduced and thirdly, the validity, reliability and generalizability of the study, linking practically this research to the situation of the wine and olive oil clusters are explained.

3.1 Research method

The approach used during the research instance of this Thesis is qualitative and the methodology was framed by the case study method. More specifically, this is a single embedded case study research. The objective was to study two clusters in the agricultural sector operating in one same context, Mendoza, Argentina. This is an embedded case study because it has more than one unit of analysis, in fact two agricultural clusters are studied and both clusters belong to a common single case study.

“A case study is a methodology that is used to explore a single phenomenon (the case) in a natural setting using a variety of methods to obtain in-depth knowledge. The importance of the context is essential” (Collis & Hussey 2009, 82). Based on this statement, the selection of the case study method for the analysis of the wine and olive oil clusters in Mendoza is considered the most accurate, as the intention is on exploring the situation and gaining a deeper understanding of the clusters’ dynamics. Besides, the context in where both clusters move is one of the central points in this Thesis as internal and external influences to these clusters are explored.

A qualitative approach was preferred in this research as one of the goals was to understand the different development of both agricultural clusters in Mendoza over time. Unlike the quantitative approach where data must be collected from a large sample of the population, “qualitative approaches to research are often characterized by small

sample sizes. The logical behind a smaller sample is that the researcher's goal is to collect in-depth information" (Hesse-Biber & Leavy 2011, 55.)

Another reason why the approach of this research is qualitative is that it "...strives to collect, integrate and present data from a variety of sources of evidence" (Yin 2011, 9). Furthermore, and following Yin's description of a qualitative research, this case study explores a real-world setting and its participants and uses interviews, observations and documents to collect data. What is more, the gathered information was scrutinized through the triangulation method, as "this convergence will add to the study's credibility and trustworthiness" (Yin 2011, 9).

More detailed information on the triangulation method can be found in the following subchapter 3.3 of this Thesis.

The purpose of this case study is explanatory because it focuses on finding evidence to explain the development of the wine and olive oil clusters in Mendoza. Generally an explanatory research seeks to explain why a phenomenon occurs. The research questions in this study however, ask how instead of why, because the main purpose was to obtain a detailed description of facts that would help explain the present situation of each cluster. Furthermore, the research questions were elaborated so that they would provide a clear explanation of the process in time that guided the development of these two clusters.

Each of the three research questions asks how different aspects occurred and according to theory "(...) how and why questions are more explanatory and likely to lead to the use of case studies (...). This is because such questions deal with operational links needing to be traced over time (...)" (Yin 2009, 9.) In addition, "explanatory research seeks to explain social phenomena and the relationship between different components of a topic" (Hesse-Biber & Leavy 2011, 10). The idea is to find out, not only how certain factors influenced the clusters in the past, but also to look at the future by explaining how can these clusters achieve a higher competitiveness with the resources and skills they now possess.

Finally, and as pointed out by Robert Yin (2003), “the case study method has been and can be used to document and analyze the outcome of public or privately supported interventions” Hence, another reason to utilize the case study method since part of this research’s aim is to find out the result that the influence of the public or private driven cluster approach has had in the wine and olive oil clusters.

3.2 Research strategy

The research strategy that I utilized served as a way to organize the different steps that are entailed in any research of this kind. With this strategy I was able to follow a certain path and understand the importance of planning in advance every action and being careful to follow a sequential order. To summarize the research strategy that I have used, the following table was created:

Table 1: Research Strategy

STEP	ACTION
Select topic for research	Cluster dynamics, competitiveness, innovation
Outline adequate research questions to better answer to research topic	4 research questions created (see subchapter 1.2.2)
Select type of data needed	Primary sources, Secondary sources
Select best technique for data collection	Interviews, Questionnaires
Utilize techniques	Perform interviews, distribute questionnaires
Retrieve information	Collect data
Scrutinize results	Analyze gathered data

The table above clearly shows the research process that enabled the collection of relevant data that finally led to the conclusive analysis of the findings. After the case study was selected, different topics of research were chosen and appropriate research

questions were prepared. Data was collected in this research to obtain concrete evidence of the real situation of both clusters and to corroborate or dismiss the assumptions made in the research questions. Furthermore, to gain knowledge of other unknown factors that influences the dynamics of these clusters.

Information was collected from various sources related directly or indirectly to the wine and olive oil clusters in Mendoza. The primary source of data for this research was collected through interviews and questionnaires. The interviews involved selected experts in the field of clusters, regional development and competitiveness as well as people knowledgeable about the wine and olive oil clusters in Mendoza. The secondary data used was historical data and previous researches, academic theses and studies related to the main topics of this Thesis.

Additionally, the sample group from which data was collected was selected strategically. Since the topics of this research are intrinsically related to the involvement of the public and private sector in the wine and olive oil clusters, to obtain the opinions of both sectors was a main goal for this instance of the research. This was particularly important since it ensured that the analysis included diverse opinions from people working at different levels. This, in time, would offer an unbiased result consistent with the reality of both clusters.

Another source of data, and not less important, was my direct observation that took place in different settings in the province of Mendoza. While doing the interviews, it was crucial to act as a critical observer, not only of the surroundings, but also of the attitudes, ways and body language of the persons I was interviewing. This observation allowed me to assemble a variety of theories that together with the rest of the sources of data, contributed to the identification of accurate conclusions.

It is important to point out that data was gathered only after the research strategy was laid out, the techniques were selected and a list of possible interviewees was drafted. Two types of interviews were used, focused interviews and in-depth interviews. "Focused interviews are more informal and they are therefore less structured. The interviews assume a conversational manner. A major purpose of such interview might

simply be to corroborate certain facts that you already think have been established (but not to ask about other topics of a broader, open-ended nature)” (Yin 2009, 107.)

The idea with focused interviews was to confirm specific data I have gathered beforehand about the clusters in Mendoza, from secondary sources. The second type of interview utilized was in-depth interviews. “You can ask key respondents about the factors of a matter as well as their opinion about events. In some situations you may even ask the interviewee to propose her or his own insights” (Yin 2009, 107.) .The type of interview used was chosen according to the situation and was fitted to the interviewee profile and or preference.

Some of the interviews were carried out over the phone or via internet phone, upon previous agreement with the selected interviewees. Generally, the focused interviews were carried out via phone or internet while the in-depth interviews were made in person during my visit to Mendoza and Buenos Aires. The questionnaire was distributed personally to people previously selected and connected to the clusters of wine and olive oil. The questionnaire used had twenty short and focused questions since the goal was to obtain precise and clear answers. During the process of selection of questions, it was carefully considered that the amount of questions were ample enough to cover all the topics present in the research questions.

3.3 Validity, reliability and generalizability of the study

The main intention when using two different techniques for data collection namely interviews and questionnaires, was to ensure the validity of the findings. This is, by analyzing the interviews and the questionnaire’s answers’, it was possible to find coinciding and discrepant points. In order to strengthen this validity, observation, documents and past analysis made on the two agricultural clusters were utilized as a third form of data building validity. This third element allowed a triangulation with multiple sources of evidence as suggested by Yin (2009, 114) and other authors. “Triangulation is the use of multiple sources of data, different research methods and/or more than one researcher to investigate the same phenomenon in a study” (Collis & Hussey 2009, 85).

The following figure 12 illustrates the idea of the method of triangulation that was utilized to ensure the validity of the findings.

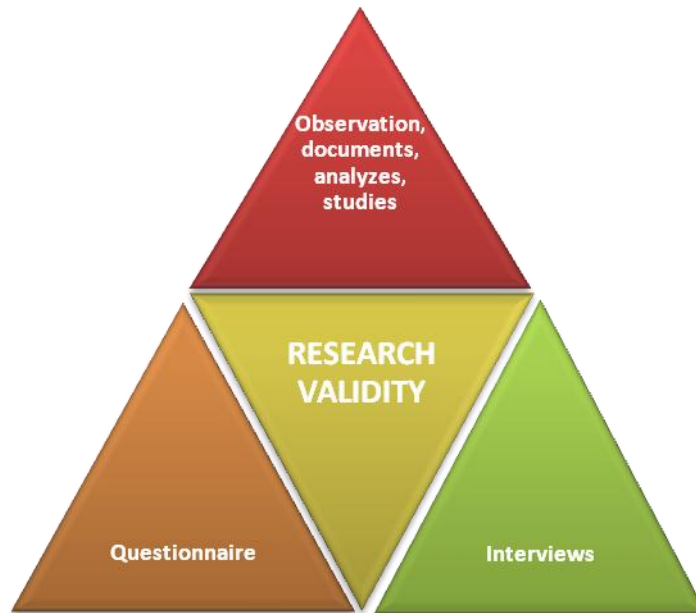


Figure 12 Triangulation method for analysis of data building validity

It is important to note that “validity is an indication of accuracy in terms of the extent to which a research conclusion corresponds with reality” (McBurney & White 2009, 173). Hence, the overall expected outcome of this research is that the results obtained from interviews and questionnaires reflect accurately the current situation surrounding the wine and olive oil clusters. If deep knowledge is to be gained from this research, is fundamental for the results to be scrutinized to determine if they successfully reflect the reality of the agricultural clusters in Mendoza.

The method of evaluation of data through triangulation, despite its complexities, allowed me to draw conclusions congruent with the real situation of the two agricultural clusters in Mendoza. What is more, triangulation was useful during the analysis of data when comparing the results obtained from questionnaires, interviews and documents. With the results in hand, it was possible to corroborate if the findings gathered through the data techniques mentioned above, were similar to one another. The finding of coinciding information strengthens the results but also differing data enables the

drawing of important conclusions. Therefore, in this case study, alike and unlike data make a statement about the real situation of the clusters in Mendoza.

Since interviews and questionnaires were some of the tools used in this case study as means for gathering relevant information and deriving results, it will be difficult to replicate the same kind of research and obtain an equal outcome. This is, even if another researcher were to examine the same clusters, situation and context and the same persons would be interviewed and answered the same questionnaires, results could be different. This is due to the fact that this research studies a phenomenon that occurs within a social context in a particular moment in time.

The assumption *per se* is that as reality changes over time and transformation and development occurs, the exact same study conducted in the future would not derive the same exact results. Moreover, in the case of interviews and questionnaires, it is important to take into consideration that people's opinions might change over time, given specific exogenous circumstances or due to personal interests. Consequently, to try in obtaining the same exact answers from the same sample of people, still, might not result in identical answers.

While "quantitative research assumes the possibility of replication" (Cohen & Manion & Morrison 2007, 148), a qualitative research as this is, is not set to be replicated so as to obtain same results and therefore create a theory. The subjects of study of this qualitative research are the wine and olive oil clusters in Mendoza and the situations taking place within those clusters are considered to be part of a social phenomenon. Therefore, the reliability of this research in terms of the possibility to be replicated obtaining identical results is null.

The reliability of this study only exists in a specific point in time but that fact does not limit the importance of it. Nevertheless, my personal opinion coincides with Cohen et al (2007), in that the uniqueness of a study that cannot be replicated exactly is in fact strength rather than a weakness. Additionally, the reliability of this research fits in the criteria of qualitative methodologies as this study "...includes fidelity to real life, context and situation specific authenticity, comprehensiveness, detail, honesty, depth of

response and meaningfulness to the respondents” (Cohen et al. 2007, 149). Therefore, and for the purpose of this research, reliability is understood as trustworthiness and credibility shown during the data collection and analysis of it rather than as a synonym of replicability.

It is fair to conclude that the generalizability of the results coming from this research is subject to the type of cases, context and situation of the regions or clusters to be analyzed. In order to utilize the conclusions of this research as a benchmark for further analysis of cases, it will be necessary to carefully observe that the same socio-economic and political conditions are present in the new case study. Although it can be assumed that countries in Latin America have alike living conditions and possess more similarities than differences, it is important to understand that the context, infrastructure and culture surrounding clusters can be entirely different.

4 BUSINESS CLUSTERS

This chapter does not aim to provide different definitions of what a business cluster is, nor dispute the significance of the term. This chapter will instead, introduce the topic of business clusters in an intelligible way so as to provide a clear idea to the reader, and especially to those non cluster experts. A brief explanation will clarify what the term implies and why it is related to the productivity and growth of regions around the world. Additionally, the aim is to capture the most relevant points related to the cluster theory, abandoning the topics that are not pertinent to this Thesis work. Finally, the earlier mentioned does not suggest that relevant literature on business clusters will be avoided as it represents the theoretical framework of this chapter.

4.1 Business clusters- conceptualization

In the past twenty years, extensive material has been published about clusters to explain their emergence and clarify the importance they have in the economic development of many regions around the world. Although this could suggest that a global understanding on what the term business cluster entails has been reached, the truth is that the implications of the term are controversial still today. Business clusters cannot simply be completely defined in a few lines because their functionality goes beyond all borders and the total impact that they have in specific regions it has been so far impossible to measure.

The concept of business clusters has an enormous significance for those dealing with the economic development of regions. Nevertheless, and as it will later be explained, business clusters have a broader impact in regions beyond the economical aspect. For example, the presence of business clusters can have a catalyzing effect on the innovation, social capital and educational level of regions. What is more, being part of a cluster can be a positive strategy for small and medium sized companies willing to expand their operations abroad or attract investments.

Clusterization or cooperation to produce goods is certainly nothing new in the economic reality of many regions around the world. In fact, already back in the 19th century, Marshall's vision on industrial districts gave a hint on to which direction the study of regional and national economies was heading to. Yet, despite Marshall's priceless contribution, it was not until the nineties and with the American Harvard educated Professor Michael Porter, that the term business cluster gained a new meaning and strength.

Porter's approach to business clusters attracted the attention of researchers, analysts, politicians, academics and all who were interested in efficient ways and solutions to enhance productivity in different corners of the world. Is therefore that business clusters, or simply clusters, as they are commonly known, have become a constant feature of Porter's researches on global competitiveness and economic development of regions and nations. What is more, the continuous evolving nature of the term business clusters has pushed renowned economic geographers like Allen J. Scott and economist researchers like Porter, to study the impact of clusters in not only developed but also developing economies.

So how did business clusters were rooted in Porter's studies? Already in the mid eighties, Professor Porter began a research triggered by observations he made of different regions of the globe. He was determined to find out which were the aspects that differentiated firms that possessed successful competitive and innovative strategies and were located in certain environments, from others in a different environment that seemed to have less success. The idea was to discover the specific features of a region that enable the creation of successful companies.

As a result from the research he made together with some of his scholars, he found that clustering or industrial concentration was a common denominator of the scenario where the most successful firms were carrying out their activities. This discovery prompted Porter to go on his research and to elaborate a model that could further explain the competitive development of firms.

In his 1990 book, *The Competitive Advantage of Nations*, Porter's central point of interest was on the factors that could make local firms and national economies more competitive. In light of this, he introduced the diamond model, a graphical representation to help assess the competitive environment and understand how firms develop successfully. The diamond model synthesized the elements that, according to Porter, build the competitive advantage of some economies.

To better understand Porter's concept, the graphic of the diamond model is shown in Figure 13 below:

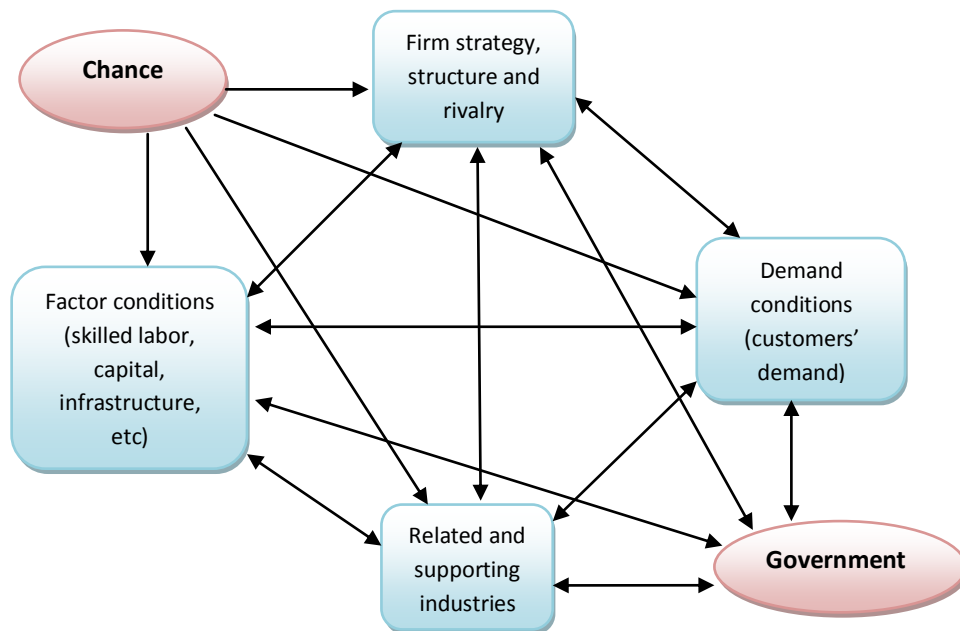


Figure 13 Michael Porter's Diamond model

The graphic above shows, in blue color squares, the four factors that Porter highlighted as enabling the creation of successful firms, and in red color ovals, the additional factors that could influence the competitiveness of these firms. What is more, and beyond his Diamond model, Porter's efforts to understand the development of certain businesses in particular regions led him to perform a deeper analysis of the role of clusters in the competitiveness of regions and economies.

In 1998, in his book ‘On competition’, Porter further developed the idea of industrial or business clusters by exploring, for example, the clusters role in competition and in the strategy of companies. He began by defining a business cluster as [...] “a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities” and further explained that “the geographic scope of a cluster can range from a single city or state to a country or even a network of neighboring countries” (Porter 1998; 199.)

Porter’s particular and most known definition of clusters helped to better understand this peculiar form of economic collaboration between firms and different supporting institutions. Moreover, this coordination of activities was not merely based on the interaction of firms with their closest raw material providers. What Porter suggests with clusters was a conjunction of many different actors in the value chain. Service or material suppliers, financial institutions, infrastructure providers, government, universities, research and information centers and trade associations are only few examples of the common members of a cluster. To help visualize this concept, below it is shown an example of the actors that can be present in a dynamic cluster.

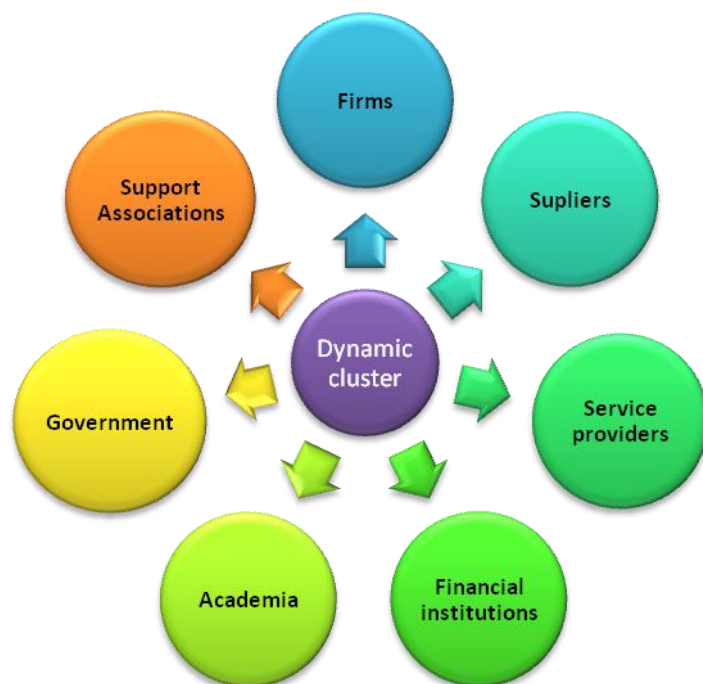


Figure 14 Dynamic cluster diagrams

It is worth noting that Michael Porter's concept of clusters has not developed over the years without the criticism of some colleagues. Some authors insist that Porter was not the first one to focus on the importance of industrial localization. In fact, Martin & Sunley (2003, 9) point out that for more than two decades economic geographers have studied the agglomeration and regional development to understand the reasons behind it. From a different angle, Rocha (2002, 375) affirms that even though Porter acknowledges the importance of territorial and socio-cultural factors, these two are not included in his concept of the clustering process and the generation of competitive advantage.

Furthermore, even some recent academic studies have openly challenged Porter's concept of clusters. Motoyama's work (2008) for example, describes Porter's theory as static and lacking of practical information on how clusters emerge. Besides, he asserts that the current cluster theory does not consider the variation that exists in different industries as "the role played by a university will be substantially more important for the biochemical and pharmaceutical industries than for the apparel industry" (Motoyama 2008, 359). Nevertheless, all of these well founded judgments on Porter's concept of clusters have not diminished the importance of his work. Instead, the gaps found in the cluster concept have triggered the need for a deeper analysis of the concept proposed by Porter.

For the non-cluster expert it can be easier to recognize a cluster by simply mentioning some international examples such as the cluster of "(...) film in Hollywood and Bollywood, wine in the Barossa Valley, IT and the Internet in the Silicon Valley, biotech in Boston, optical equipment and cars in Kanto and Kansai, Japan, financial services in Manhattan's Wall Street and inner London, automotive production in southern Germany, watches in Switzerland, and mobile communication in Stockholm." (Sölvell 2009, 9). These examples of clusters are widely known and are prove that the cluster structure can become very productive when the efforts are coordinated.

Looking deeper into the cluster concept, it is fair to say that being part of a cluster can offer several opportunities to companies. One of the important benefits is the so-called knowledge spillovers. These spillovers can help firms to learn from each other and

exchange valuable information that can help them to enhance their productive activities. In fact, “the most important mechanism considered to be working in favor of growth relies on the generation of knowledge spillovers between firms.

“One of the reasons why it might be worthwhile for a company to move to a place where many of its competitors are located is to benefit from the productive solutions developed by other firms” (Blien & Maier 2008, 6). Yet, Blien and Maier (2008, 19) also suggest that when a firm recognizes that the knowledge outflow can be more valuable to its competitors than the knowledge inflow they can get from competitors, they see the spillovers as negative. This is one of the many aspects related to the clusters’ interconnectivity that firms must consider.

The issue of trust building is without a doubt the backbone to all cluster theories and perhaps the least explored. Moreover, “the reliance on relations of trust in a cluster has the additional consequence of reducing power” (Blien & Maier 2008, 5). This last and significant point refers to the power that trust has in relations and where it becomes more important than business profits or transactions. Nevertheless and whether relations of trust are positive or negative to business, the cluster concept does not offer a deep analysis of it.

One attractive aspect of clusters for many industries and especially to those in the agricultural sector is that clusters propose a better and closer relation to the productive chain. “Proximity saves transport costs and facilitates the close coordination of activities” (Blien & Maier 2008, 6). Besides, there are numerous opportunities that can greatly benefit firms working within a cluster.

Some cluster benefits are shown in the figure below.

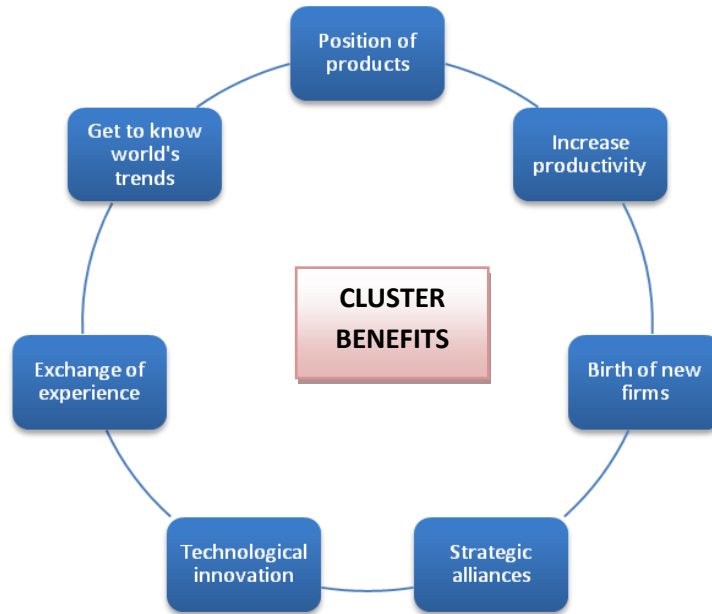


Figure 15 Benefits that companies or industrial sectors can achieve through a cluster

As clearly shown in the graphic above, the benefits are wide and cover many aspects of the business activities. From the circle is possible to see that many of the benefits are related to the productivity of the firms, such as position of products, strategic alliances and technological innovations. Moreover, other benefits such as exchange of experience and get to know world's trends are rather connected to the opportunities found in a cluster that allow the building of strategic steps to achieve a greater competitive advantage.

Spillovers allow a firm to benefit from the knowledge and experience that other firm has acquired without having to invest in gaining the same knowledge. Last, the birth of new firms is a spiraling effect expected from clusters as the environment within clusters is the ideal for the development of new businesses. In fact, Sölvell asserts that “the rate of new business formation tends to be higher in dynamic clusters. Start-ups are reliant on close interaction with suppliers and buyers. The cost of failure is typically lower within a cluster where many alternative opportunities exist” (Sölvell 2009, 20.)

When applied to the particular case of the clusters of the wine and olive oil in Mendoza, the strategy used to create these business clusters faces an additional controversy, besides the issue of trust previously mentioned. This controversy is based on the type of

initiative that created the cluster, whether the idea departed from the government or the industry itself. When the government is picking the winners the situation can become difficult and some authors take a stand on this position by explaining that “the consequence of this feature of cluster strategies is that they are not neutral with respect to the industry structure of an economy. (...)Normally, a selectivity of this kind is regarded as highly problematic” (Blien & Maier 2008, 8.)

On the one hand, it is possible to find a stricter judgment of this type of strategies with some authors stating that “the creation of clusters should not be a government-driven effort, but should result from market-induced and market-led initiatives” (Guinet 2003, 158). On the other hand, there are authors who believe that the “emergence from industry-led projects creates problem with government commitment, and vice-versa, government-led projects tend to stifle commitment from industry once the cluster initiative is set up” (Sölvell et al. 2003, 12), finding advantages and disadvantages in both cases.

From the standing point of this research, the development of business clusters is considered to be very important for predominant economic regions such as Mendoza. The results emerging from the governmental or industrial origin of these clusters must be analyzed carefully, separately and from an objective point of view. In light of this, the research question number 2 on this paper focuses on the analysis of this specific issue.

Now, to understand the significance that the concept of clusters has in the agricultural sectors analyzed on this Thesis, it is necessary to primarily comprehend the importance the concept has in Argentina. While in many economies across the world clusters have been a natural part in the strategy of many companies, in Latin America, and more specifically in Argentina, the concept of clusters has a long way to go before results can be harvested from the agricultural sector.

In the following subchapter 4.2, a deeper outlook on how the concept of clusters has gained importance over time in Argentina.

4.2 Clusters in Argentina

The concept of clusters in Argentina is not yet widely recognized as it is a slowly emerging phenomenon. What is more, the simple idea of collaboration or association between businessmen or companies is unlikely to take place spontaneously. Unfortunately, this non collaborative attitude could be misinterpreted as intentional rather than as a feature of the business culture in Argentina. “Different studies made in past decades, reveal the firms predominant isolating behavior, a disarticulation of the value chains and also the absence of a network of institutional support” (Kantis, Drucaroff, Martinez 2005, 3).

The last mentioned, extracted from a research study made in Argentina, could therefore suggest that the leading behavior of firms obeys to a somewhat individualistic mindset for doing business. One interesting fact to be highlighted, is that according to the individualism and collectivism index made by Dutch professor Geert Hofstede (2001, 215), Argentina is characterized by having a low level of individualism in the society, when compared to other developed nations. In fact, Argentina ranks 22nd, while United States, Great Britain and Sweden ranked 1st, 3rd and 10th, respectively.

One could wonder that if Argentina has preferably a collectivist society, at least according to Hofstede’s index, why the cooperation between firms rarely occurs? The goal with this Thesis is not to perform a Sociological or Anthropological study; therefore no further analysis will be done for this matter. Yet, it could be worth thinking that the isolating behavior of firms that was identified might not be related to an individualistic mindset, but instead to a traditional approach to do business. This is, the fact that cooperation does not happen spontaneously might be one feature of a traditionalist society, as is indeed Argentina’s.

When it comes to the agricultural clusters in Mendoza, the experts’ opinion regarding the style of business is consistent. “It has been very hard to try to integrate the olive oil sector in Mendoza as it is a sector that has some old fashioned working structures, they find very hard to cooperate in any form” (Araniti 2011). “The Argentinean producer is very individualist and trust is always a problem” (Panasiti 2010). The challenge of the

agriculture sector is clear and might also be one reason why the cluster concept has not expanded so rapidly.

There are very few formal studies made regarding the presence of clusters in Argentina. One of the most relevant and extensive researches made took place between 1994 and 2002. This research was carried out by a group of researchers from the Observatory of PyMIS (Small and Medium Industries) from the Industrial Union in Argentina and the University of Bologna in Italy. The research considered all the provinces in Argentina and had two clear objectives, first, to measure the contribution made by the PyMIS of each area to the development of their region and second, to analyze the regional concentration of specific industrial sectors.

Findings from the research made show that there was a tendency for the PyMIS to agglomerate in regions with certain concentration of businesses of the same sector. Another interesting result was that the PyMIS that were located in territorial spots were more developed than those located out of the spots. "Spots are well delimited geographical areas that group internally an important portion of the sector, measured in terms of offered employment" (Kantis et al. 2005, 20). The concentration and better development of businesses inside territorial spots was a good sign for the possible presence of clusters.

In the second phase of the research, the observatory of PyMIS continued to explore for possible clusters and accepted that a concentration of firms would be defined as a cluster only when obeying the existence of formal links criteria. The criteria for an industrial region to be considered a cluster was that there must be a high number of technical schools, at least one faculty from the National University of Technology (UTN) and at least one delegation from the National Institute of Industrial Technology (INTI). Finally, from the total of 129 industrial agglomerations identified, 98 were aligned with the set cluster criteria.

Yet, and despite the fact that the research offered important information, some limitations appeared. The presence of institutions or technical schools did not necessarily mean that their activities were linked to the needs of the local companies or that there was any link between these institutions and the private sector. Therefore, while the research showed a possible platform for cluster formation, did not prove the existence of one. After results were gathered, 30 clusters that met the criteria of having formal and informal links were selected for further analysis.

The situation of these clusters was analyzed and compared in two instances in time, 1994 and 2000. After the analysis, interesting results corroborated previous studies. There were strong indications that new businesses usually spun-off from a concentration of specialized regions and that regional development tended to increase because of this. What is more, when the industrial productivity in Argentina fell between 1994 and 2000, all businesses inside clusters showed better results than those who were isolated. Once more, working inside a cluster format seemed to be the solution for many businesses that otherwise would have suffered from the effects of globalization.

The final research made on the defined clusters also showed limitations. The exclusion of big companies and the tight criteria for defining the existence of a cluster in a region were part of those limitations. Nevertheless, this research made a few years ago was a very important first step for identifying the possibilities for developing clusters in certain regions of Argentina. Even more, this research confirmed the positive effects of clusters setting a good precedent for future research and implementation of the concept.

While there are still today not sufficient examples of natural formation of clusters, the agglomeration of businesses of the same and related sectors is a growing tendency. A growing competition of markets worldwide and the need for a sustainable development of industries to survive is making many businesses consider the concept of clusters. Businesses are starting to see clusters as a tool for enhancing productivity and overcome difficult times.

Yet, despite the apparent benefits of being part of a cluster shown in previous researches in Argentina, since the implementation of clusters in Mendoza is relatively new, only future research will show whether the cluster tool has been as effective as expected. In the meantime, this Thesis will offer an overview of the current situation of both agricultural clusters in Mendoza so as to expose the development process of these clusters.

5 DISCUSSION AND ANALYSIS OF DATA

In this chapter are described the tools that were utilized to evaluate relevant information gathered from interviews and questionnaires. Additionally, a thorough explanation on how the data was interpreted and how conclusions were drawn is presented. For this purpose, related graphics are shown to facilitate the understanding of the findings. Finally, this chapter introduces the answers to the research questions that conducted this Thesis and opens possible discussion topics that could inspire future research.

5.1 Analysis of data

As further explained in the methodology chapter 3 on this paper, the primary sources for data collection for the research were interviews and questionnaires. It is necessary to start by mentioning that all the information from interviews gathered for this Thesis was carefully analyzed observing all the personal subjectivity that can influence person to person interviews. Some aspects that were taken into consideration while collecting data were body language, verbal remarks, language utilized, and the flow of interview. The idea behind this was to try to limit as much as possible any aspect that could affect a fair result of the analysis.

The questionnaire distributed covered a wide range of topics such as dynamics, governance, and competitiveness. All of these topics are related to the research questions and aimed to maintain the focus of the research. The questionnaire was created using different types of question formats' to avoid a monotonous style and thus attract the respondent to answer twenty questions without feeling discouraged. Some of the formats used to design the questions were:

- *Open ended*: respondents free to write their own answer,
- *Multiple choice or close ended*: respondents to pick one or more answers given in advance,
- *Dichotomous*: respondents to answer yes or no,
- *Importance*: respondents to rate the importance of items or topics.

Some of these question formats are shown with concrete examples further on this chapter.

Many of the questions had also the forced choice format “this is a common type of scaling technique used by many business researchers. In the forced choice ranking scaling technique the respondents rank different objects simultaneously from a list of objects presented to them” “(...) this scaling technique is known as the forced choice because the items or objects on the scale are decided by the scale designer.” (Bajpai 2011,53.)

The majority of the questions in the questionnaire were designed according the five point Likert-type scales. “The Likert scale was developed by Rensis Likert and is the most common scaling technique in the field of business research” (Bajpai 2011,56). A Likert scale “...is a summated rating scale used for measuring attitudes” (Jupp 2006, 161). This means, each question contained five optional answers given in a particular scale range.

Here an example of the Five points Likert scale used in question 6 of the questionnaire:

6) How would you rate the **collaboration between members** in your cluster?

POOR	SCARCE	GOOD	VERY GOOD	EXCELLENT
1	2	3	4	5

For the analysis of this type of questions, a numeric value from 1 to 5 was given to each answer. This way, the negative answers located at the leftmost side of the Likert scale were numbered as 1 and the most positive answers located at the rightmost side of the scale were numbered as 5. As it is clear from the example above, a different number appears below each of the optional answers. This numeric value is not shown in the questionnaire and therefore not visible to the respondent as it only serves as a helping tool when answers must be analyzed by the researcher.

The analysis of this type of Likert scale questions was made through various steps and each question was analyzed separately. After assigning a numeric value or coding each optional answer, the first step was to create two tables per question to record the different answers given by the respondents of each cluster. The second step was to organize the data collected in a way that would enable the drawing of accurate conclusions.

There is a continuous discussion in the research world about the type of data that can be collected from the use of Likert scales. This discussion is centered into whether the data resulting from Likert scales is ordinal or interval. “Strictly speaking, Likert scales are ordinal. However, researchers usually treat Likert scales as interval because it is assumed that distances between the scale values are equal” (Vanderstoep, S & Johnston, D. 2009, 54.) “Likert scales generate ordinal data, but it is not uncommon to find analysts treating the data as if they are interval. Researchers remain much divided about this matter partly because it has major implications for the type of statistical analysis that can be undertaken with ratings data.” (Bannock et al. 2003, 308.)

Given the specific type of Likert scales used on the questionnaire for this research, the standing point on this Thesis leans on the idea that the data collected from Likert scales is in fact ordinal data. As a researcher, I base this opinion on the grounds that “each item in a Likert scale is an ordinal measure because the response alternatives have a fixed order but not necessarily equal spacing between alternatives” (Monette et al. 2011, ch.13, 354). Consequently, on this Thesis, all the data collected from the Likert scale-type of questions is treated as ordinal data and analyzed with the appropriate technique for this type of data.

During the analysis, the answers from the wine and olive oil clusters were summed up per question and a median number was calculated. “Methodological and statistical texts are clear that for ordinal data one should employ the median or mode as the measure of central tendency because the arithmetical manipulations required to calculate the mean (and standard deviation) are inappropriate for ordinal data where the numbers generally represent verbal statements” (Jamieson, 2004, 1217).

For the analysis of the Likert scale type of questions the median was calculated by organizing the numeric responses (shown in table 3) and identifying the ‘middle number’. Here, some examples of the steps used to analyze each question. Note that the examples below correspond to the analysis of question number 6 previously introduced.

Table 2 Coding of optional answers

Poor	1
Scarce	2
Good	3
Very good	4
Excellent	5

Table 3 Recording of answers given by each respondent

Respondents (WINE)	Answer
1	4
2	4
3	4
4	3
5	4

Respondents (Olive Oil)	Answer
1	2
2	3
3	3
4	4
5	4

Table 4 Calculated Median of response

Wine: 3, 4, **4**, 4, 4

Olive oil: 2, 3, **3**, 4, 4

	WINE	OLIVE OIL
Collaboration	4	3

As indicated in Table 4 above, the median of the responses collected was calculated with the purpose of emphasizing the weight of responses and thus create a bar chart or graphic representation of the answers for each particular question. The bar chart created from the median of responses given for question 6 is shown in Figure 16 below.

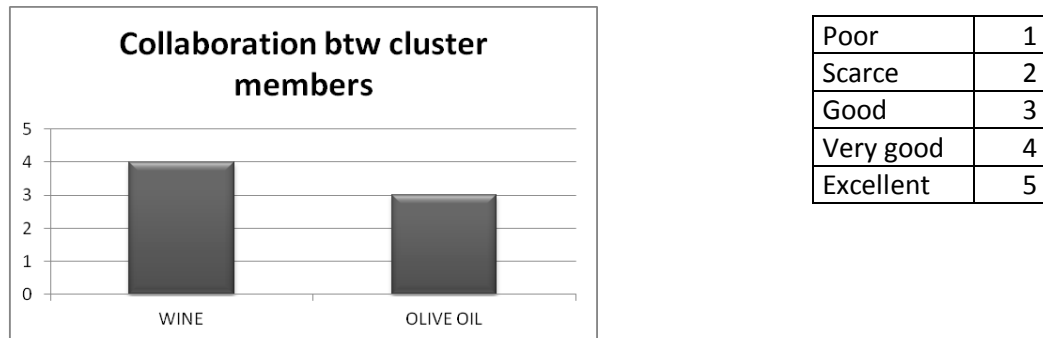


Figure 16 Bar chart of responses

The bar chart from Figure 16 although rather simple, is presented as an example and it offers a clear idea of the different opinion found when the answers of both clusters were compared. This way, as derived from the bar chart above, the respondents from the wine cluster believe that the collaboration between members of their cluster is very good, while the members of the olive oil cluster rated the collaboration as good.

Since the size of the sample utilized on this research is not large, it is possible to deduct from Table 3 above, that the answers given by the wine cluster were more uniform (four responded very good and one responded good) and the answers from the olive oil cluster were rather diverse (two responded very good, two responded good and one responded scarce). This, of course, would not be so clear when the sample is much larger. Nevertheless, and although two positive conclusions are derived from the bar chart, it is worth noting that the convergence or divergence of opinion within each cluster also reveals an important factor and hence adds value to the research.

The second part of the analysis of the questionnaire involved questions that were created with the objective to collect more general data. These questions called open ended gave an opportunity to the respondent to formulate its own responses or opinions about specific situations. The idea was to collect data from the general situation of each cluster in order to obtain a wider perspective of analysis. Additionally, it was assumed that each answer to these particular questions, given their spontaneous nature, could add great value to the research.

Below, an example of the open ended non-Likert scale type of question

- 2) *In your opinion, which internal factor does/do NOT benefit your cluster at the moment? (internal factor = inside the cluster)*

The internal factor/s that does/do NOT benefit my cluster is/are:

.....

Another non-Likert types of question were those with a multiple choice format, since the answers given could not be rated with a number. Following, an example of a multiple choice question used.

- 4) *Which tools do you consider necessary to apply in your cluster to achieve competitiveness? Please, choose from the list below, or create your own.*

<i>Technology</i>	<input type="checkbox"/>	<i>Investments</i>	<input type="checkbox"/>
<i>Logistic</i>	<input type="checkbox"/>	<i>Integration</i>	<input type="checkbox"/>
<i>Support</i>	<input type="checkbox"/>	<i>Other</i>	<input type="checkbox"/>

If OTHER was selected, please, mention at least some of the tools you consider necessary to apply in your cluster to achieve competitiveness.

.....

The questions that were not created with a Likert scale format were analyzed individually and a list was made with the answers collected from the wine and the olive oil clusters. The idea with these separated lists was to compare the answers given by both clusters' members and examine if despite basic differences, there were coincidental opinions about their industrial sector. These coinciding and contrasting opinions offered an actual idea on the concerns and goals of each cluster as well as ideas to better the overall situation of the agricultural sector.

Before focusing on the results or findings on this research, it is necessary to have a word on the analysis made from the data gathered during personal or phone interviews. All of the five interviews made, whether personally or through the phone, were recorded upon agreement with each interviewee. These recordings were converted word by word into

text and since the interviews were made in Spanish, these texts were also translated literally into English. It is worth highlighting that most of the interviews were rather informal and did not have a structured order or predetermined sequence to be followed.

Additional information on the style of interviews made can be found in detail in subchapter 3.2 on this paper.

The informal style of interviews, highly preferred by the interviewees, provided a pleasant atmosphere and enabled them to not only share factual information about their sector, but also to express their personal opinions on the situation of the clusters. All of the interviews were largely informative and provided interesting facts regarding the development of each cluster. Given the amount of information received during these interviews the analysis of data was made underlining the most significant points of each interview and the points that could trigger further discussion.

In subchapter 1.2.2 of this paper, the research questions that guided this Thesis were introduced and explained to provide the main points of interest that triggered this research in the first place. The aim of this Thesis was to find the answers to the research questions by collecting information from the wine and olive oil clusters. The answers gathered from questionnaires and interviews enabled a more concrete understanding of the vision and the direction that each cluster is aiming to.

Here, the main findings and answers to the research questions.

- 1) How do five specific drivers shape the dynamics of the wine and olive oil clusters in Mendoza, Argentina? (drivers: economic, political, social, educational, innovation)

From the starting point of the research it was clear that the five drivers mentioned in the question do influence the dynamics of both clusters. Yet, it was necessary to find out in which way these drivers affect the activities of the wine and olive oil clusters. Two questions in the questionnaire opened this subject and aimed to discover how both

clusters prioritize the five drivers and how important these drivers are in the clusters' activities.

Here, questions number 8 and 13 related to the research question.

8) *In a scale from 1 to 5, please, classify the list below according the priorities for your cluster (list with the drivers)*

13) *How would you qualify the level of importance that the following drivers have in the activities of your cluster?*

For each of these two questions a bar chart was designed in order to obtain a more clear vision of the results from the answers collected from both clusters. Below, the bar charts created based on the calculated median of responses.

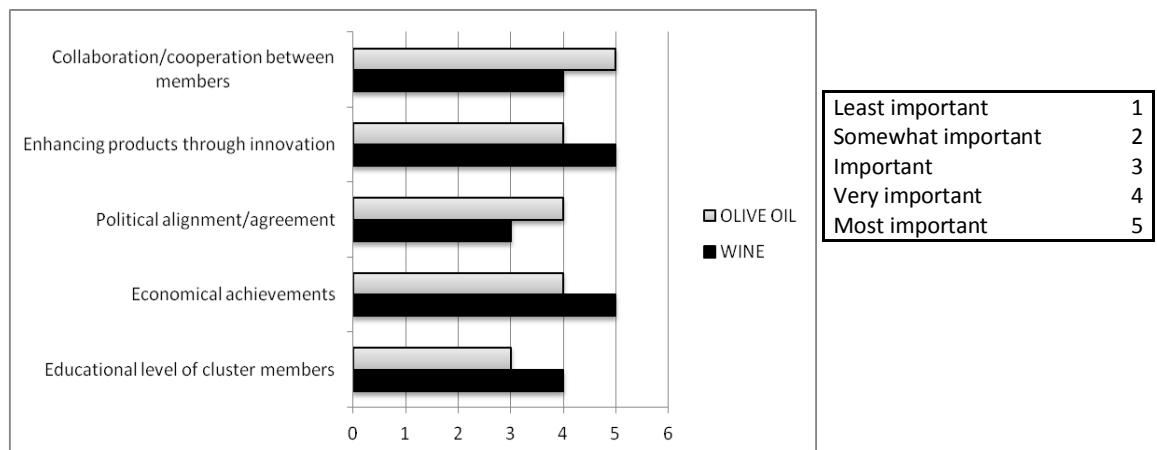


Figure 17 Bar chart with results for question 8

Not important	1
Slightly important	2

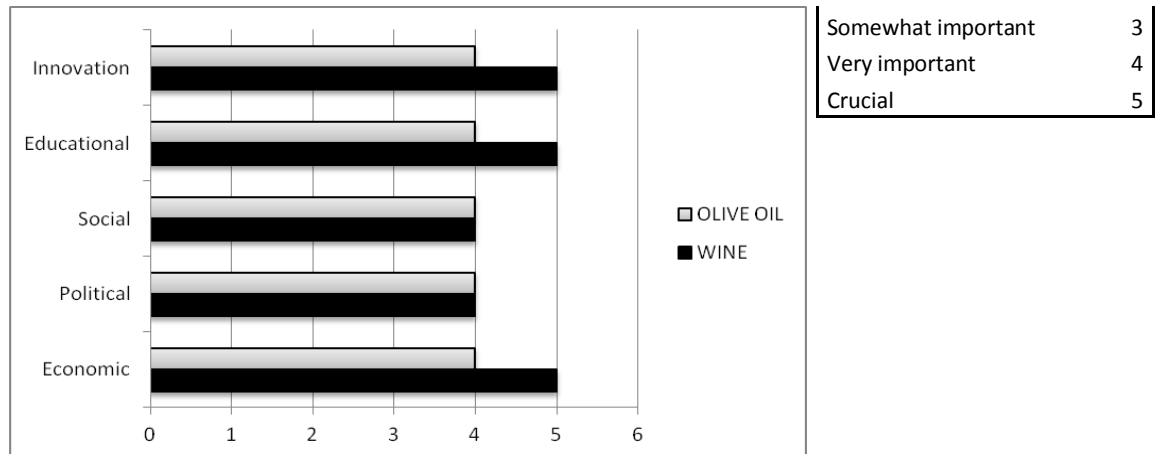


Figure 18 Bar chart with results for question 13

Results from both bar charts previously presented revealed that economic, educational and innovation drivers are considered most important for the wine cluster, while the social driver is most important for the olive oil cluster. Although this conclusion does not answer the research question, it brings an important piece of information to it. The fact that the wine cluster rates the economic, educational and innovation driver as most important is not a mere coincidence and neither is the fact that the olive oil cluster rates highly the social driver. Data gathered from interviews made to members of both clusters support the results shown in the bar charts and also offer a deeper perspective of the drivers shaping the dynamics of the clusters.

To start from the wine cluster and based on data collected from the research, there are clear reasons why the economic, educational and innovation drivers are considered as most important for this cluster. The wine cluster, a traditional cluster with many years of experience in the agricultural sector, has overcome many difficulties and succeeded in maintaining a stable growth compared to other sectors of the industry. Its current position allows the cluster to focus most of its activities into economic achievements by developing a strong marketing and communication strategy.

The educational driver has shaped the dynamic of the wine cluster by helping the sector getting out of the crisis of the 80's. When different producers decided to learn from the foreign wine industries they travelled and acquired knowledge that they later applied into their wineries. This decision allowed the wine sector to grow rapidly and strengthen

its position, not only in the internal market, but also in the external market. Nowadays, a good network with local educational institutions helps to maintain a good level of technical education related to agriculture and wine making in the province. Given this existing good level of education is therefore that the wine cluster, as shown in Figure 16, considers the educational driver as very important but not as the most important priority on the agenda.

Due to the importance that the wine cluster has for the economy of the province, accounting for 41% of Mendoza's total exports, this cluster receives great support from the provincial government. As explained by Mr. Marquez one of the interviewees, the wine cluster members "...also utilized political lobbying and got a strong support from the government. They have a consolidated structure called today the wine corporation, count with own wine strategy plan, human resources and sources of financing" (Marquez 2010.) All this allows the wine cluster to have a privilege position in front of other clusters. This also explains why, by looking at the bar chart in Figure 16 is possible to see that the wine cluster members have rated the political alignment as important but not as one of the most important priorities for the cluster.

According to the interviews made, innovation is another important focus for the wine cluster and the innovative mindset is considered as the core competence that drove the cluster to its successful position today. Additionally, most of the activities of the wine cluster are currently based on creating innovative strategies to strengthen the image of the wines from Mendoza and increase the exporting market. In fact, results from the questionnaire show that the creation of innovation accounts for 61 to 81% of the wine cluster activities. Nevertheless, since this sector must face a strong competition from other wine producing countries, the speed of innovation needed to survive in the industry is still a matter of concern for this cluster.

Notwithstanding the previously explained, and based on information collected from the interviews made, the dynamics of the wine cluster are particularly influenced by the political and social drivers. Although not affected by the provincial government, the wine cluster is reached by the national government political measures. As made clear by one of the wine producers interviewed for this research "...at a governmental level, we

have a political issue. Politics in Argentina are constantly changing. One government comes and creates a law and then a new government comes and changes it” (Sejanovich 2011.)

Furthermore, the economy of the cluster is also affected by the national government measures as explained by Mr. Sejanovich “...in terms of the importing politics of Argentina, we have a serious problem with Brazil, for example. Argentina says “we are not going to import anything from Brazil” and Brazil closes its doors: “ok, Argentinean wine does not come in” and Brazil nowadays is becoming one of the main destinations for export (...)” (Sejanovich 2011.) He then continues by addressing a problem with the government involvement in the sector and explains that “Nowadays the problems come from the national government (...) They make short term decisions, thinking more about the elections and numbers they can show and do not care about creating a real economy” (Sejanovich 2011.)

The social driver also shapes the dynamic of the wine cluster as producers work together towards common goals. “...the wine companies have not had a good communication in the past because they were competing with each other in the internal market, but slowly they realized that to be able to export they had to have a common message” (Sejanovich 2011). Moreover, in terms of human resources, the social driver is a very strong influence in the wine cluster. As explained in chapter 2.4 in this paper, and based on information from interviews and recent news, the wine cluster faces an increasing lack of farming workers during the harvesting season. This situation has gradually worsened in recent years and is especially affecting the wineries that have utilized traditionally the handpicking method for the collection of grapes.

When it comes to the olive oil cluster the social driver plays an important role since this is a new cluster and it has difficulties with the integration of its members. From interviews made to members of this cluster it became clear that the issue of trust building is a permanent feature in the agenda. As explained by one of the olive oil cluster members “it has been very hard for us to try to integrate the olive oil sector in Mendoza as it is a sector that has some old fashioned working structures. They find very hard to cooperate in any form” (Araniti 2011.) There are currently different initiatives

from the government to try to integrate the members of the cluster through workshops and events. Nevertheless, the lack of trust rooted in the culture of Argentina and the atomization of the sector prove to be difficult factors to overcome.

Since the olive cluster has been implemented by the government of Mendoza, the political driver is a natural influencing factor in the cluster. Political measures taken by the national government do affect the olive oil cluster but these measures are many times minimized by the provincial government. The economic driver is also connected to the provincial government since great part of the cluster's budget has come from the governmental program subsidized by the International Development Bank. Through the economic help received from the government it was possible for the olive oil cluster members to develop initiatives such as the tasting panel in order to provide an added value to the olive oil as a product and achieve international recognition.

The educational driver, although considered just important in the results gathered from questionnaires, is one of the main cornerstones for the olive oil cluster. It is easy to read from the data collected during this research that the initiative of the tasting panel would not have emerged if two prominent researchers from the faculty of Agrarian Sciences in Mendoza would not have been involved. The main idea of the olive oil cluster is to be able to bring the olive oil back to the internal market and launch an important campaign to promote it. To materialize this goal, it is necessary to count with extensive research.

One of the interviewed researchers from the Agrarian Faculty explained why it was important to participate in the cluster program "I and Mrs. Bauza have been working on the olive and on the quality control, physical and chemical analysis and sensorial analysis. (...) We had only few resources and scarce methodology. We liked to be involved in the project as it was going to give some kind of continuity to what we have been doing for years..." (Araniti 2011.) Constant research is nowadays the main tool for the olive oil cluster to discover new qualities in a product that has not been studied enough in Argentina. The participation of researchers and the education in the field of agrarian sciences is a permanent feature in the olive oil cluster.

The innovational driver also shapes the dynamic of this cluster due to the nature of the olive oil as a product. The olive oil market is very competitive worldwide and innovation is the only way to attract customers to buy the product. But the olive oil is a complex product as “it is very difficult to separate the label from the olive oil commodity” (Sejanovich 2011). However, the olive oil cluster seems to have found ways to leverage the product and this is supported by the government “we are in fact working hard on encouraging the differentiation through the quality of the products and already the olive oil cluster has been working on analyzing the quality of the oils coming from different oasis or productive regions in Mendoza. We do support constantly innovation” explains Mr. Panasiti (2011), an agro-food cluster specialist working with governmental program for cluster promotion and interviewed for this research.

To summarize the findings for this first research question is important to point out that data from interviews offered a slightly different perspective than the data collected from questionnaires. As earlier mentioned, the interviews did support the answers collected from the questionnaires, but also provided more details that enabled the identification of strong drivers also influencing the dynamics of both clusters. In the following table 5, the findings from questionnaires and interviews.

Table 5 Drivers identified shaping the dynamics of the wine and olive oil clusters

	Results from questionnaires	Results from interviews
WINE	Economic, Educational, Innovation	Political, Social
OLIVE OIL	Social	Social, Political, Economic, Educational, Innovation

As clear from table 5 above, the drivers shaping the dynamics and that appear to be stronger according to the interviews made to the wine cluster member, are different than those identified from the questionnaires. As interpreted from the information collected during interviews, in the olive oil cluster all of the five drivers were identified as equally strong and shaping the dynamics of the cluster.

- 2) How does a top-down or bottom-up approach to cluster implementation influence the dynamics of the two agricultural clusters in Mendoza, Argentina?

The top-down and bottom-up approaches to cluster implementation have been discussed in many academic researches (Sölvell et. al 2003; Eisebith & Eisebith 2005; Karlsson 2008) and is still today a divisive topic. The discussion is mainly centered into whether the government should intervene ‘selecting’ and ‘forcing’ the clusters formation, or are the firms themselves who should come together and form a cluster according to their needs. Furthermore, the debate focuses also on which role the government should take during the clusters’ organization. While there are no studies explicitly stating that the government should take no part into the clusters implementation or functioning, numerous researches suggest that a private or bottom-up approach is more effective and appropriate to clusters.

“Clusters form as a result of a self selection process on the part of firms which see advantages in exploiting their interdependencies for mutual benefit, a process that can be encouraged but not ordained by public agencies’. Effective clusters development policies are likely therefore to be bottom-up (Atherton 2003), in that they emerge out of sustained transactions between firms that are seeking or starting to collaborate” (Karlsson 2008.) Following the last excerpt from Karlsson’s book, it becomes clear that the natural emergence of clusters is also based in trust relationships built by firms spontaneously.

Over time, some cluster initiatives have been measured and results showed that bottom-up implemented initiatives are most successful. In fact, “the best performing clusters in German initiative ‘kompetenznetze.de’ are bottom-up clusters that include almost one quarter of all innovative clusters in Germany. They are initiated outside of funded clusters without any political influence and with 73% of private financing – not public” (Gawarzynska 2010, 67.) Even the international economic Organization for economic co-operation and development OECD is clear in that “the emergence of clusters is mainly a market-induced process with little governmental interference. (...)Government should not ‘pick winners’ or ‘let the winners pick the government” (OECD 1999, 327.)

In order to elucidate how both approaches to cluster implementation have influenced the dynamics of the wine and olive oil clusters in Mendoza, answers from interviews and questionnaires were analyzed. In the questionnaire, four questions related to the government's role aimed to gather the opinions of members of both clusters and bring valuable information to help identify the answer to this second research question.

The bar charts for each of these four questions were combined into one bar chart and are shown below in Figure 19.

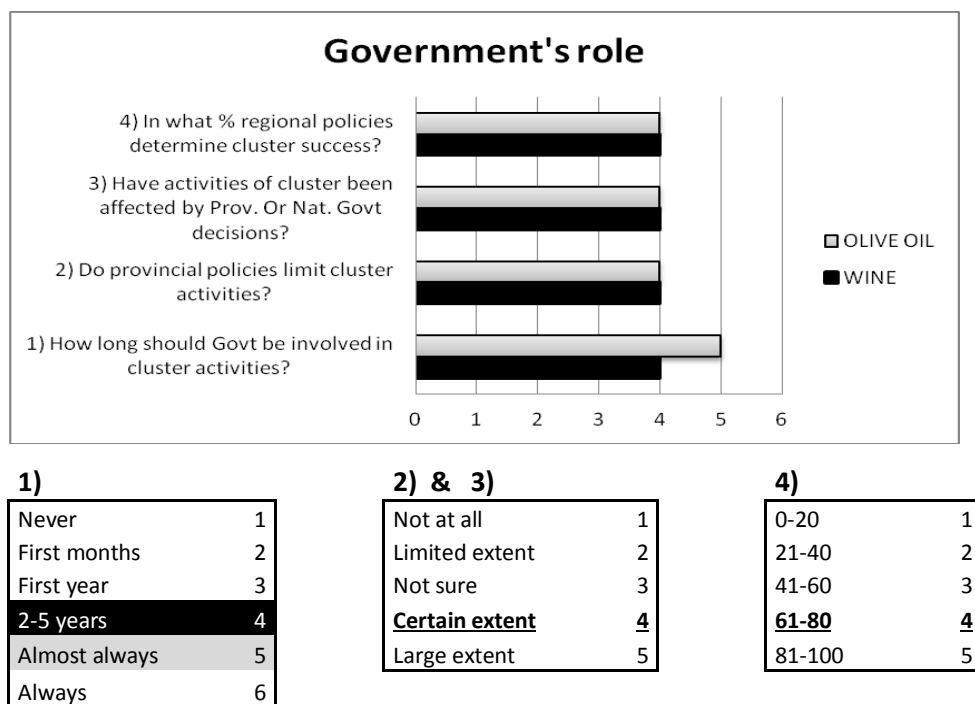


Figure 19 Government's role

As clearly shown in the bar chart above, the responses of both clusters for questions 2, 3 and 4 were identical except for question 1 inquiring about the length of time that the government should be involved in cluster activities. While the wine cluster's opinion is that the government should be involved in the activities of the cluster between 2 to 5 years, the olive oil cluster's opinion is that the government should be involved almost always. In addition, the bar chart shows that both clusters have coinciding opinions in that their activities have been affected or are limited by the provincial or national governments' decisions to a certain extent. Furthermore, the wine and olive oil clusters

indicated that the success of their cluster is determined in a 61 to 80% by regional policies.

Results gathered from interviews to both clusters show diverging opinions on this topic. Particular assessments came from consultants that have worked with both clusters and from members of the government's cluster program. The general manager of the governmental cluster program in Mendoza, Mrs. Rapaccioli (2011), was asked during one of the interviews to give her opinion about clusters implemented by the government and clusters implemented by the private sector, she assertively responded emphasizing "in my opinion, all clusters must have support from the government, always (...) clusters cannot be independent or imposed by one or the other, (...)in one way or the other the government must participate, maybe not permanently, but must support with political measures, laws, programs, education, etc (Rapaccioli 2011.)

Although the cluster experts and consultants that were interviewed during this research have worked very closely with the provincial government, their perspective was rather disparaged towards the government's proceedings. Mr. Marquez, one of the cluster experts, highlighted that "the timing for developing the cluster program was wrong" pointing at one mistake that the government in Mendoza made during the cluster implementation. He also indicated that "when the program of clusters was introduced to the agricultural sector, the producers were going through a moment of intense growing of their exports, after the devaluation (in Argentina) (...) as they were going through a process of good fortune, they did not worry about the clusters formation and did not care" (Marquez 2010).

Mr. Marquez also indicated that "there have been some failures in the design of the cluster program from the very beginning. Also people did not know what a cluster was (...) the failures came from the government of Mendoza and from the financing institution (...) was not even written in the papers that the sectors should constitute a governance structure" (Marquez 2010.) Another cluster expert and consultant interviewed, asserted that "top-down decisions are made by educators and policy makers of infrastructure; they do not know the reality and the challenges of the companies grouped in clusters" (Salvatierra 2011.) Moreover, he offered a closer

outlook on the problematic revealing that “Mendoza’s errors arise from the weak conceptual understanding of the problems of clusters. These misconceptions lead to dead ends and errors of implementation” (Salvatierra 2011.)

In terms of the role that the government should play during and after a cluster has been formed, the opinions seemed to be less diverging. In fact, and following the previously expressed by Mrs. Rappaccioli, the general manager of the governmental cluster program in Mendoza, “governments can facilitate the smooth and dynamic functioning of markets by creating favorable framework conditions (vigorous competition policy, smooth macroeconomic policy, deregulation) and by reducing market (or systemic) imperfections (informational barriers, organizational failures, and externalities and spillovers)” (OECD 1999, 327). Mr. Marquez also agreed in that “the government role is to help communicate and facilitate all communicational efforts and provide coaching to sectors so they can understand what clusters are about” (Marquez 2010).

By juxtaposing all the data gathered on this research in connection to the top-down and bottom-up approaches, it was possible to recognize that the overall dynamics of the clusters are not being explicitly influenced by either cluster approach. Instead, the olive oil and wine clusters seemed to be influenced by the measures and policies coming from the national government. However, the dependency relationship that each cluster has with the provincial government is one significant difference identified. Since the olive oil cluster emerged from a governmental cluster program, and as shown in the bar chart in Figure 18, it requires the connection with the government to be almost permanent, while the wine cluster, a privately implemented initiative, suggests that 2 to 5 years is the time that the government should be involved in cluster activities.

The dependency of the olive oil cluster on the provincial government is mainly reflected on the almost constant economic support that they receive to carry on with diverse cluster initiatives. The wine cluster also carries on initiatives that count with the support of public-private institutions and organizations, such as ProMendoza, an entity that helps promoting Mendoza’s products and services in international markets. Nevertheless, given that the wine cluster is stronger in terms of financial resources, the dependency on the governmental support is rather based on what the provincial

government can do to alleviate political or economic measures coming from the national government.

It is worth noting that in spite of the cluster experts' critical opinion, the remaining interviewees did not explicitly show any discontent with the role or measures that the provincial government is taking. From the mere observation in my role as a researcher, I realized that in fact the presence of the government guiding the activities seemed to be in many cases crucial to secure the continuity of the initiatives. I observed as well that the governmental cluster program, currently supporting the olive oil cluster and its initiatives, is the main organism keeping the flow of communication between clusters' actors by creating workshops and meetings. In fact, members of the governmental cluster program confirmed that there is a genuine interest on building a strong social capital in order to facilitate the organization of the cluster.

The later said however, appears to contrast with the results of previous studies indicating the weak participation found in cluster activities emerging from a top-down approach. Eisebith & Eisebith (2005) have made a research in which they have compared what they call implicit bottom-up approach vs. explicit top-down approach and the involvement of firms in cluster activities. The results from their research showed that firms from clusters implemented with a bottom-up approach show a higher participation in cluster activities than those firms from clusters implemented by a top-down approach. Nonetheless, at least what it concerns to the olive oil cluster, the governmental cluster program in Mendoza seems to be the solely engaging partner that facilitates the connection between members.

With the intention of bringing to light the discussion over the most appropriate approach to implementing clusters, Eisebith & Eisebith's (2005) research does not advocate for any specific approach, but they do suggest that the implementation should be based in the region's situation, preconditions and objectives. In light of this, they further suggest that "where regional structures show a lack of material assets and entrepreneurs and where most actors have so far been operating isolated from each other, explicit public cluster policies maybe a better (initial) choice" (Eisebith & Eisebith 2005, 1265.)

Following the last statement, a top-down approach implemented during the olive oil cluster formation appears to be the right choice for this new cluster.

Also for the case of the wine cluster, the bottom-up approach appears to be aligned with the suggested by Eisebith and Eisebith (2005, 1265) “where infrastructure is already quite developed and a set of ‘first movers’ companies exists with loose contacts to a sufficiently large number of value chains, related firms and other organizations (...) implicit bottom-up initiatives more adequately foster real cluster effects”. Yet, in the particular case of the province of Mendoza, it is impossible to make a generalization of the preconditions of the region as suggested by Eisebith & Eisebith, since every sector in the agriculture industry has a different infrastructure and therefore the conditions can vary. The wine cluster’s infrastructure, given years of development, experience attained and a wide support network, is stronger and more efficient than the infrastructure found in the olive oil cluster.

As earlier presented, results emerging from the bar chart in Figure 18 indicate that the activities of both clusters are being affected by measures of the provincial and national governments. Also, the wine and olive oil clusters estimate that the success of their cluster is highly related to provincial policies. Yet, considering the later, it is important to note that these results obtained from the questionnaires do not necessarily suggest that a top-down or bottom-up approach to cluster implementation influences the dynamics of these clusters. What these results suggest is that measures or policies arising from the provincial or national government are directly shaping the clusters dynamics given the influence that these have in clusters’ normal operations.

To recap, and as opposed to what it was assumed by this second research question, the most important findings show that the dynamics of the wine and olive oil clusters are not directly influenced by either approach to cluster implementation. In fact, it was found that neither a top-down or bottom-up approach interfered into the normal functioning or productive development of both clusters. Nevertheless, a dependency relationship with the provincial government was found to be the main difference between the wine and olive oil clusters’ dynamics. This is, the olive oil cluster appears

to be highly dependent on the provincial government's support in terms of financing and governance as opposed to the wine cluster.

Implications of this relationship of dependency are further examined in the discussion sub chapter on this paper.

3) How can the wine and olive oil clusters moderate the influence of the political and economic external factors?

↳ How can innovation contribute to minimize the political and economic external factors?

This third research question, although wide in perspective, contains a sub question that centers the attention into the important role of innovation. From this research standing point, and as supported by business clusters' literature, it is clear that innovation is key when it comes to confronting political and economic factors. Moreover, innovation has become more accessible for businesses inside clusters, given the endless possibilities of networking and exchanging of ideas that a cluster format offers. In fact, recent year's studies made by the European cluster observatory emphasized the important relationship between the degree of clustering in a region and its innovative performance (Sölvell et. al 2009,13).

To be able to identify the most accurate answer to this research question, two different topics were examined and are here defined as external factors recognition and innovation appreciation. In practice, the first step was to explore what are the external factors that the clusters considered non beneficial to their activities. The second step was to discover how both clusters understand and value innovation. The questionnaire distributed contained two specific questions related to these topics. Below, the questions and answers collected from the questionnaires.

Question 3: Which external factor/s does/do not benefit your cluster at the moment?

Table 6 External factors not benefiting the clusters

WINE CLUSTER	OLIVE OIL CLUSTER
➤ Competition (external markets)	➤ Socio-economic situation of the olive sector in region
• Globalization	➤ Prices at international level
➤ Barriers to export	➤ Investments
➤ Positioning external markets	➤ Tax deferrals
➤ Too few alliances with countries to export (ex. Chile)	➤ International production with greater benefits
➤ International economic situation	➤ Politics in taxes
➤ Argentinean image in foreign countries	➤ National government politics
➤ Project financing	• Weather
➤ Support from banks	➤ National government support

Question 9: In what percentage the activities of your cluster are related to the creation of innovation?



Figure 20 Percentage of cluster activities related to innovation

As clear from table 6 above, the majority of the external factors identified as non beneficial by the wine and olive oil clusters are economic and political. These results confirm the assumption made on this research question concerning that political and economic external factors are in fact influencing both clusters. Although weather and globalization were also listed by cluster members, these are not directly politic or economic external factors. Weather and globalization are rather phenomena which results can have direct implications in the economy and politics of a region and so affect clusters. The factors collected in table 6 comprise literal answers given by members of both clusters. These results added value to this research question by providing information about the total picture of factors that the clusters consider as threats.

The results pictured in Figure 20 above show that the wine cluster activities are, based in percentage numbers, more related to innovation than the activities from the olive oil cluster. These particular results from the questionnaires are in fact synchronized with results found from interviews. Interviews made to members of both clusters, and also to cluster experts, revealed that although both clusters are engaging in activities related to innovation, the wine cluster is situated at a different level of development than the olive oil cluster when it comes to applying innovation.

On the one hand, the olive oil cluster is currently working in the analysis and research of the olive oil as a product to achieve differentiation through quality and so conquer new markets with innovative commercial ideas. This work is constantly supported by the government, as confirmed in an interview by Mr. Panasiti (2011), a specialist in agro-food clusters working with the cluster program in Mendoza. On the other hand, the wine cluster is focusing innovation to enhancing its marketing and communication strategy to attract young consumers and new markets. As explained by Mr. Sejanovich, an independent wine producer and one of the interviewees, “we must explain why an Argentinean wine can cost more than a French wine. We must invest in that type of communication to our consumers” (Sejanovich 2011.)

Based on all the information gathered from interviews and questionnaires, and supported by mere observation of the current situation, it became evident that the olive oil cluster is facing the difficult challenge of finding original qualities that will enable a better positioning of the olive oil produced in Mendoza. This challenge is based on the nature of the product, as it is certainly different than of the wine. In addition, the reputation and acceptance that the olive oil has in the national market is yet to be gained. In terms of the foreign market, the competition is still strong and national political and economic measures are not contributing to ease this situation.

For the wine cluster, the situation is slightly different. The wine is “not a commodity” as Mr. Sejanovich explained, and therefore it can be commercialized under different strategies. Moreover and as also pointed out by Mr. Sejanovich, the wine sector in

Mendoza counts with a good level of technical education related to the agriculture and the wine making. Education, without a doubt, supports innovation but from an internal perspective. The mere observation of the activities of this cluster and collected data from questionnaires and interviews indicated that although the provincial government does help in the promotion of the viticulture, the contribution of this government in supporting innovation is still weak.

So how can innovation contribute to minimize the external factors listed in table 6? Firstly, data gathered during this research indicates that both clusters regard highly innovation. In fact, going back to the results from Figures 17 and 18 on this chapter, the wine cluster considered innovation as crucial and most important and the olive oil valued innovation as very important. As mentioned earlier, understanding how innovation is valued is the first step to identify what role it plays in the strategic planning of the cluster.

There are several reasons why innovation is the right path for both clusters in Mendoza. In fact, one of the reasons is that “innovative clusters of economic activity are becoming magnets for new technology, skilled personnel and research investment” (OECD 1999, 7). From the mere observation of the activities of the wine and olive oil clusters it emerged the question into whether the provincial government is able to assertively foster innovation. Complications can arise when “in some cases, governments themselves cause problems by implementing regulations that inhibit innovation of simply by making mistakes in the design of policy” (Benneworth & Charles 2001,391).

It is worth highlighting that as Benneworth & Charles emphasized in their work, “(...) the key to the success of a cluster policy is the degree to which innovation is stimulated” (Benneworth & Charles 2001, 396). Yet, the wine and olive oil clusters have take on ‘their own hands’ the initiative of utilizing innovation to address their sectors’ needs, not expecting stimulus to innovation to emerge from the government. Furthermore, and going back to the external factors listed in table 6, is also obvious that many of the factors, such as barriers to exports, supports from banks and tax politics, could not be surpassed without the government intervention.

The ideal of innovation suggested by this third research question is for the clusters to see innovation as a constant goal to be achieved with the objective to reach sustainable competitiveness and sustainable development. It is necessary at this point to clarify that “sustainability implies that social, environmental and economic systems can be managed to support themselves and the continuance of life” (Nova Scotia government 2005, 4). What is more, this thesis supports the idea that “a sustainable competitive economy must become both efficient and generative. It must, in the way it operates, support the development and growth of the living systems, natural and human that support it and achieve technical sophistication” (Nova Scotia government 2005, 6.) Although several characteristics in both clusters show a solid potential to achieve sustainable competitiveness, the relationship of these clusters with the idea of attaining sustainable development or ‘going green’ with their activities was not visible during this research.

Nevertheless, different examples of activities where clusters are utilizing or plan to utilize innovation were identified on this research. Some examples of this are:

WINE CLUSTER

- Enhance marketing and communication strategies
- Foreign market analysis
- Product adjustment to meet segments (national and foreign)
- Create and consolidate an identity and image for Argentinean wines
- Technological research
- Create product differentiation based on ‘cultural icons’ of Argentina

OLIVE OIL CLUSTER

- Taste Panel development to achieve international recognition certificate
- Medical research on the properties of olive oil
- Differentiation of olive oils based on different oases of production
- New olive oil targeted for kid’s consumption (OliKids)
- Research on olive oil varieties
- Continuous technical research on climate and frost control

In all truth, all of the above mentioned activities, although related to innovation and helping the clusters achieving a future sustainable competitiveness, are not directly minimizing the political and economic external factors. Information collected from interviews and questionnaires indicate that due to the nature of the political and economic factors influencing the activities of both clusters, these could not be confronted effectively by using innovation.

However, and based on the present characteristics of each cluster, different opportunities to use innovation to minimize some external factors were identified. Below, table 7 and 8, show some examples of these.

Table 7 Opportunities through innovation for the wine cluster

WINE CLUSTER (Non beneficial external factors)	OPPORTUNITIES
• Competition (external markets)	✓ Enhance product line through innovation
• Globalization	
• Barriers to export	
• Positioning external markets	✓ Adjust the image of wines
• Too few alliances with countries to export (ex. Chile)	
• International economic situation	✓ Adjust production selecting target segment
• Argentinean image in foreign countries	✓ Marketing strategy
• Project financing	✓ Business angels, private national or foreign investors
• Support from banks	

Table 8 Opportunities through innovation for the olive oil cluster

OLIVE OIL CLUSTER (Non beneficial external factors)	OPPORTUNITIES
• Socio-economic situation of the olive sector in region	✓ Enhance social capital by better explaining purpose of cluster
• Prices at international level	✓ Adjust technology to reduce costs
• Investments	✓ Research innovation (health benefits?)
• Tax deferrals	
• International production with greater benefits	
• Politics in taxes	
• National government politics	
• Weather	
• National government support	

Both tables above presented, show opportunities that the wine and olive oil clusters could identify to help minimize the political and economic external factors. These opportunities are ideas proposed by this research based on the characteristics and capacity of each cluster. As clear from the tables, no ideas are presented for those factors that are strictly connected with actions to be taken by the provincial or national government.

Furthermore, and as mentioned earlier on this question, the differences found between the olive oil and wine clusters in terms of applying innovation are based on how each cluster understands the concept of innovation. The fact that results from questionnaires showed that both clusters highly value innovation does not necessarily explain that they understand the real meaning of it. From interviews and from information gathered through the mere observation, it was found that the wine cluster has a concrete and practical understanding of what innovation implies, while the olive oil cluster's understanding of innovation is more abstract and unclear. Nevertheless, this research understands that these differences are found could be partly connected to the fact that the wine sector has been for a long time part of a cluster while the olive oil sector is relatively new to this model.

To summarize the findings for this third research question and sub-question, the results emerging from gathered data show that the wine and olive oil clusters have identified as non benefiting external influences political and economic factors, agreeing with what was assumed by this research question. Additionally, it was recognized that given the nature of the economic and political factors currently influencing the clusters, these cannot be tackled by the solely use of innovation. The reason for this is that many of these political and economic external factors can only be moderated by the provincial and National governments and are therefore beyond the power of the clusters.

Furthermore, information collected through interviews revealed that both clusters possess a different understanding on what innovation implies. The wine cluster sees innovation as a concrete strategic step, and is able to apply it with a long term vision. Unlikely, the olive oil cluster is still unclear about the use of innovation in all its forms,

and uses innovation with a short term perspective. This, far from revealing a lower level of innovativeness in the olive oil cluster, could signify that there is a misunderstanding about the concept of innovation and in the ways how to apply it as a strategic tool.

5.1.1 Discussion

This discussion sub chapter aims to rise up different issues examined on this Thesis by providing argumentation that explicates why the findings identified are relevant to the clusters' future. Moreover, and following the introductory chapter of this Thesis, is here discussed whether the objectives of the research were met. Additionally, this sub chapter introduces new issues that were not analyzed in the research questions but are of equal importance and do contribute to this research. These issues are related to situation of the wine and olive oil clusters and useful to understand the underlying problematic of these clusters. Last, this sub-chapter introduces opportunities for further research.

5.1.2 Concerning the research questions

The results emerging from this research reflect not only the differences between the wine and olive oil clusters, but also the diverging opinions that can be found within these clusters. In fact, it was interesting to recognize differences between the answers from the questionnaires and the interviews made. In the specific case of research question 1, there is clearly from both clusters a dissimilar vision of the drivers shaping their dynamics. In light of this, it could be worth for the wine and olive oil clusters to re examine the perspective that they have in regards of which are the more influential factors on their activities. This re examination could enable the clusters to better allocate their resources and thus be aware of their core competences.

The second research question, in contrast to what this Thesis assumed from the beginning, revealed that neither a top-down or bottom-up approach to cluster implementation has influence in the dynamics of the wine and olive oil clusters. This Thesis assumption was aligned with numerous literature about clusters suggesting that government implemented clusters have often more disadvantages than those being implemented by the private sector. Clusters emerging from a top-down approach are

frequently regarded as less efficient, less productive and the results emerging from this type of clusters is usually questioned in several academic papers (Enright 2003) (Guinet 2003) (Eisebith & Eisebith 2005).

The findings from this Thesis prove that there is no factual connection between the way these clusters were implemented and the positive or negative outcome of their initiatives. The truth is that whether the clusters were implemented by the government or by the private sector, is still today uncertain why some clusters are more dynamic than others. From the point of view of this Thesis, the dynamics of the clusters are rather determined by several external factors that are also related to the current world business scenario. The successfulness of a cluster initiative, at least in the case of the clusters in Mendoza, cannot therefore be attributed to the top-down or bottom-up approaches.

Nevertheless, and although the different approaches to cluster implementation were proved not to influence the dynamics of these clusters, the olive oil cluster was found to be highly dependent on the provincial government's support. This, of course, can be understood from the point of view that this cluster was implemented by the government. However, this research foresees that the benevolent role of the government can create confusion in the future, especially when it comes to the governance of the cluster. To become less dependent on the government can also be beneficial for the olive oil cluster as the short-termed mentality of the government, focused on producing results within a short time frame, can hurt the development of the firms inside the cluster. The strategic goals that clusters pursue not always can be fitted into such time frame. Clusters, as expressed in many academic papers, (Sölvell et al. 2003; Ketels et al. 2008) have a life cycle and do need time to mature and develop.

The findings for the third research question and sub question contrasted with the assumption made of innovation as an efficient tool to face economic and political factors. While this assumption could be truth in certain clusters and regions around the world, this idea does not apply to the clusters in Mendoza. The influence and many times negative effect of the political and economic factors surrounding these clusters do not depend on the level of innovation present in the clusters. In fact, to find a solution to

the main political and economic external factors affecting the agricultural clusters is the mere responsibility of the provincial and national governments.

Furthermore, results gathered from interviews and questionnaires suggesting that there is confusion with the concept of innovation indicate that there are still ground issues to be solved by the clusters before they can appropriately benefit from innovation. In reality, is possible to identify that both clusters have innovative ideas to help their sectors achieve sustainable competitiveness. Nevertheless, the short-term long-term dichotomy on the use of innovation is what ultimately will define if these clusters have successfully achieved the goal of sustainable competitiveness.

The findings deriving from the research questions were both informative and unexpected. They were informative because every research question brought up new issues that were not explicitly considered on this research and added value to it. Additionally, the findings were unexpected given the assumptions made on the research. As it was clear from the beginning of this research, both clusters were implemented by two different approaches; therefore, the assumption that these would influence the dynamics of the clusters was made. The expected outcome of this assumption was to identify the ways how these approaches influenced the clusters. However, the real outcome showed that there is in fact not evidence that supports the assumption made. Similarly, the assumption about innovation contributing to minimize external political and economic factors was made. In reality, the findings proved that the majority of externalities impacting both clusters cannot be minimized by using innovation.

The research outcomes contradicting with the assumptions made clearly show that there is a wide gap to be filled through further research in order to understand the real dynamics of the clusters. This research covers only a minimal part of all the issues that should be examined by the wine and olive oil clusters in Mendoza before they can lay out future plans to reach competitiveness for their sectors. A wider and more detailed research of the core competences and governance of agriculture clusters in developing nations could be an appropriate subsequent study to this research.

5.1.3 Optimizing the benefits of the cluster model

The knowledge and expertise gained by firms or industries located within a cluster framework would not be sufficiently exploited unless it is shared with other members of the cluster. This means that only when a firm or industry is ready to share its knowledge and expertise is taking a big step in enabling innovation and competitiveness to surface from collaboration. It is noteworthy to mention that the renowned economist Alfred Marshall (1920, Book IV chapter X) when referring to industrial districts, already pointed out some of the advantages of “co-location” or, location of diverse industries in the same area. These advantages can be compared with the benefits that industries can attain when being part of a cluster.

“Co-location facilitates the flow of knowledge through direct and indirect network effects. Directly, by the way of people knowing each other, understanding each other, and sharing information in the subculture of an industrial district. Indirectly, network effects are realized through the mobility of people, who transport competence and tacit knowledge, thus adding to the productive and innovative capacity of the individual firm. In both cases, knowledge spillovers increase the rate of innovation and the speed of diffusion of innovations” (Karlsson & Flensburg & Hörte 2004, 207.)

The excerpt above presented summarizes concretely the core benefits of knowledge sharing within clusters, and the direct effect these have on boosting innovation. Unfortunately, the knowledge sharing characteristic was not clearly identified in the wine and olive oil clusters during this research. Although both clusters often participate in meetings and events where they can discuss issues concerning their industries, the mere reunion to brainstorm solutions and exchange expertise is apparently not part of these clusters’ agenda. Nevertheless, and far from being a negative issue, this is clearly an opportunity to be explored by both clusters.

In view of clusters implemented by the private sector, such the case of the wine cluster, careful attention should be paid to the great atomization of the sector and to the recent years’ trend of new entrants into the wine production business. These new entrants, as defined by Mr. Sejanovich, one independent wine producer interviewed, ‘create

unbalance' in the business since their expertise in production and commercialization of wine is often poor as they are only attracted to the status that the wine business generates. This Thesis suggests that the government could help the wine sector to organize the unbalancing situation created by 'new entrants' by creating regulations based on the skills and capacities of the incoming producers. These regulations, of course, should be created alongside with the members of the wine sector and not with the intention to overrule the cluster but rather to create balance in it.

Evidence emerging from this research suggests that both clusters are not making use of all the benefits that a cluster model can offer. This Thesis identified that one of the ground reasons for this could be the clusters' poor knowledge or understanding of the cluster concept. The assumption here made is rooted in the rapid expansion of the cluster concept the last ten years and its popularity in different countries and regions around the world. Besides, this particular issue became evident when found during this research that other regions in Argentina are using a different name for the commonly known 'clusters'. For example, some regions adopted the name of local productive systems. This was highlighted by Mr. Alejandro Naclerio (2011), one of the interviewees and coordinator of the local productive systems throughout Argentina "cluster is and English word and even in English I am not sure if everybody understands what it means. It gives you the idea of something that is grouped in space but here you have the idea of working together".

The wide range of benefits that a cluster format can bring to developing economies has prompted many regions including Mendoza, to quickly put into practice the selection and creation of clusters. However, and based on the way the governmental cluster program works in Mendoza, is worth considering that more efficient and long lasting benefits to the regions could be achieved if a deeper understanding of the cluster concept would be pursued. Governments' rushing to implement the cluster model based on international trends or to meet a 'political campaign agenda' does not seem to be the most accurate approach for developing regions if sustainable competitiveness is one of the goals to be reached.

There are sufficient examples in different academic researches and studies made throughout Europe and North America (Porter 1998; Sölvell et al. 2003; Karlsson 2008) suggesting that clusters offer a positive impact in those regions that are craving for development of their industries. However, as little is known about clusters in South America, new and useful information can arise from the study of these clusters. This is precisely why this Thesis is focused on two South American clusters. From the findings of this research it became clear, for example, that there is a disconnection between the role that the government should play and the role it currently plays. As the ideal role of the provincial government should be to accompany and support cluster initiatives, in reality the government in Mendoza is seen as the funding organism that merely aids economically the development of new initiatives.

Another important characteristic arising from this Thesis that could be worth an examination in further research, is the unspoken dispute existing between the provincial governments and the national government. This research is only focused in cases from Argentina but it could bring great benefit to the cluster studies to focus attention in other parts of Latin America as well. The reality in Argentina shows that measures enforced by the national government often clash with the objectives of the provincial governments. This disagreement affects the clusters and hinders the opportunities for development. This Thesis aims to create awareness about this issue since it is critical to find a solution to this to avoid a negative long term effect on the productive industries in Argentina.

All the results emerging from the findings of each research question reflect only partially the situation of the wine and olive oil clusters in Mendoza. Additional and equally important aspects stressing the problematic surrounding the clusters were found in the interviews made. What is more, the mere observation during interviews to members of the clusters and experts, presented a different view on the relationship between the clusters and the government. One example of this was observed during some of the interviews where it was possible to 'read between the lines' that the relationship between the academia and the government was rather tense. In fact, one of the interviewees did not hesitate to show that there is a disconnection in terms of how the communication flows between the government and the cluster members. This issue

should be addressed especially with the objective of trust creation between clusters and the government. If a sense of mistrust is nurtured by the government itself, this could lead to a disengaging of cluster members and ultimately to the clusters' dissolution.

The issue of mistrust between the government and the private sector is a widely known fact, not only for the clusters in Mendoza but also for many industry sectors in Latin America. This rather negative aspect is commonly understood as one of the features of Latin American cultures. However, based on the information collected during this research, it could be unfair to center the attention solely into the mistrust between public and private entities. In fact, the data gathered reveal an even more serious concern that is the mistrust existing within the clusters. In the case of the wine and olive oil clusters in Mendoza, the mistrust existing was found to be based in reasons such as the opportunistic behavior exhibited by some members, lack of trust in the practical value of initiatives based on past experiences and disagreement on financial objectives between sectors of the cluster.

Another important aspect that emerged from interviews on this research was the poor alignment that exists between the research made by the academia and the real needs of the industry. In practice, educational institutions inside the agriculture clusters carry on with research that although important for the agriculture sector, it is often not relevant for businesses as it does not have a commercial objective. In order to better optimize the benefits of the cluster model, is necessary to align the work of the academia with the objectives of the industry. From this Thesis standing point and as suggested by literature on clusters (Sölvell et al. 2003), the need for research should emerge from the business sector and the role of the academia is to help businesses develop by creating commercial value through research.

One interesting issue pointed out by interviewees from the wine cluster is that of the still current overproduction of wines. As explained by one of the wine cluster members, "the businessmen and the government make mistakes on which is the starting point. The starting point is the market. The problem has always been that after all is ready and produced they introduce it to the market" (Sejanovich 2011.) The problem of overproduction, as mentioned in chapter 2.4 on this Thesis, was one of the causes for

the big crisis that the wine sector suffered in the 80's. If this situation continues, the wine cluster can face stagnation and great financial difficulties once more. Is therefore that this Thesis urges the clusters to intensify their focus on the market's needs, factor that could be measured, for example, by universities. When academia and the wine cluster comes together to tackle this issue, the financial burdens that could be caused by overproduction could be avoided and a stronger relationship between businesses and the end consumer could be gained.

It is fair to say that the objectives of this research were successfully met since results show that the information emerging from this work could in fact be useful to the wine and olive oil clusters in Mendoza. One of the purposes of this Thesis was to offer a new perspective in regards to cluster's dynamics and also to create awareness on the issues surrounding the clusters. This research contains solid information to help both agriculture clusters identify the factors that shape their dynamics, readjust their focus and take action. Besides, the broad perspective on the cluster's environment and problematic here introduced offers the wine and olive oil clusters a good opportunity to tackle those issues that many times could be unspoken or unknown by the clusters themselves.

Further analysis on governmental policies to effectively aid the clusters development is here suggested as this could provide great benefits to industries that currently feel a disconnection or mistrust in the government figure. Moreover, this Thesis advocates for the creation of nation-wide-State-implemented cluster policy that would guarantee the continuation of cluster initiatives over time, without jeopardizing the positive results obtained due to changes in the governmental power. Additionally, a deeper study into the value of social capital in Latin American cultures could serve as window to refocus the priorities of many business sectors. Finally, a redefinition or adjustment of the cluster model when applied to Latin American clusters could be more appropriate and useful in the future as the cluster model is being increasingly adopted in Latin America. In practice, this Thesis calls for an enhanced redefinition of the concept of clusters that can offer concrete and practical examples on how to tackle the difficulties that could arise when applied to different regions and cultures.

All the results emerging from this research may be especially interesting in the field of cluster studies as they reflect the reality that agriculture clusters face in one of the most productive regions in Argentina. Besides, results highlight the immediate clusters' needs that could be addressed by an enhanced cluster model. From this Thesis point of view, for the wine and olive oil clusters in Mendoza to optimize the benefits of the cluster model it is necessary to understand what the model implies. In addition, ground issues like mistrust, conflicts of interest, political and economic factors and bureaucracy should be addressed before cluster initiatives are implemented. Lastly, the role of the government and the relationship with the business sector in Latin American countries should be redefined and adjusted to meet the industries' real needs. For this purpose, it could be useful the participation of sociologists and other experts in the field of social sciences that could take a role as mediators between the governments and the business sector. What is more, the introduction of clusters' facilitators or project leaders could be an effective way to aid the clusters' organization in Latin America and other developing regions.

5.2 Study limitations

One of the limitations of this Thesis is that the research is limited to one context, which is the province of Mendoza in Argentina. Therefore, the applicability of the findings to other context should be carefully assessed and adapted. Furthermore, the data gathered from interviews and questionnaires only reflects the situation of the wine and olive oil clusters in a particular point in time. It is worth highlighting that the political, economic and also social scenario can suffer changes for both clusters. Consequently, if the same case study will be performed in the future, the likelihood exists that the context might have changed. Another limitation, although not directly affecting the research, is that most of the data gathered in the research instance of this Thesis is in Spanish language. Spanish is the major language utilized in Argentina and the majority of the interviewees did not speak English and others simply preferred using Spanish during the interviews. Given that this study is written entirely in English language and the data collected is in Spanish, this required a strictly accurate translation of texts, calls and interviews before the main analysis of data could be done.

6 CONCLUSIONS

The findings derived from this Thesis expose issues that are directly connected to the future development of the wine and olive oil clusters. These issues were never before explored in the context of clusters in Argentina and could open a door to a new way of analyzing the cluster's dynamics. Studies on cluster's dynamics (Sölvell 2008, 18) generally analyze the way clusters function internally and their linkages with other firms and markets. Deriving from the objectives and the research questions of this Thesis, it is suggested that the cluster's dynamics should be observed also from the angle of the external influences, as these have a central role as forces shaping and redefining the functioning of clusters.

Clusters in Mendoza could greatly benefit from the information here presented as they could obtain valuable information on how their competitiveness is related to externalities and why it is important to strengthen ground issues in order to optimize the benefits of the cluster model. Data from this research revealing that inside the clusters exist diverging opinions on common issues can be useful to create awareness and foster integration between members. By recognizing its dependency relationship with the government, the olive oil cluster could redirect its goals and take charge of its governance requiring from the government only to guarantee framework conditions for the cluster.

Information surfacing from this research proved that innovation does not have a sufficiently strong impact in those political and economic external factors that go beyond the cluster's solving ability. Therefore, it could be worth finding a mechanism to create a natural synergy between the government and the clusters in Mendoza. This problem could be partially solved by the government planning initiatives jointly with the clusters, not as a financial provider but as partner of interest. Besides, results from this Thesis could serve as a ground for opening the dialogue between clusters and the provincial government.

This research also presents a realistic idea to clusters to better understand how their dynamics work, what the challenges ahead are and which strategic steps should be implemented before focusing efforts in achieving competitiveness. From the outcome of this research, there is no doubt that the wine and olive oil clusters in Mendoza have an enormous competitive potential based on the knowledge and expertise of their members. Nevertheless, this potential could be better exploited if accompanied by a stronger governance structure.

It is no secret that today's business world demands for fast changes and continuous reinvention of products and services to meet consumers' demands. But when it comes to traditional products like wine and olive oil this challenge seems difficult to meet due to the low versatility of the products, the slow pace of innovation and a high competitive market. The responsibility to keep alive these traditional industries poses now a challenge to the public and private sectors to come together and find a non-biased solution. The only purpose should be saving the agriculture industry due to the immense importance it will have in the future as food continues to become scarce and expensive.

This Thesis set out objectives that were met as concrete answers to the research questions were identified. However, the findings from this research are only a starting point to begin understanding how clusters work in developing countries. Some of the questions this Thesis is not able to answer but certainly relevant to future research are: how can traditional industries survive the ever changing and competitive business world where governments are unable to guarantee basic framework conditions, Is our vision on innovation as the key to success in the current business world too abstract or 'naive', Do we set too high expectations on the cluster model as 'prosperity generator'.

While this research concludes here it is important to remember that the quest to achieving competitiveness continues with an even stronger impetus in the future. The challenge lays on future research identifying new business models to increase competitiveness where adverse business environments exist.

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Kemi-Tornio University of Applied Sciences, Finland (www.token.fi)

The purpose of this questionnaire is to identify the main characteristics and dynamics of your cluster. By analyzing the answers to this questionnaire it will be possible to better understand the situation and context of your sector. Finally, this understanding will enable the proposal of strategic steps to help strengthen the competitiveness of your cluster and industry sector in general. Solange Banchero -Viklund

QUESTIONNAIRE

Name (optional)

Title/occupation/position:

Organism or Institution you belong to:

Cluster you are responding this questionnaire for:

DEFINING YOUR CLUSTER

1) Please, **categorize the following aspects** according to the situation in your cluster:

a) DINÁMIC (they way how your cluster functions)

POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

b) COMMUNICATION (the communication between the members of your cluster)

POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

c) VISIBILITY (related to its popularity and /or regional and/or national preponderance)

POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

d) FLEXIBILITY (easiness to work with new proposals and/or with different cluster members)

POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

e) **RESOURCES** (availability of resources within the cluster. Ex. workers, machinery, etc.)

POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

f) **LEADERSHIP** (related to the cluster’s organization/ existence of well defined roles within the cluster)

POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

g) **HOMOGENEITY OF INTERESTS** (the interest in achieving common goals)

POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2) In your opinion, which **INTERNAL** factor/s **does/do NOT** benefit your cluster at the moment? (Internal factor= inside the cluster)

The **INTERNAL** factor/s that **DOES/DO NOT BENEFIT** my cluster is/are:

3) In your opinion, which **EXTERNAL** factor/s **does/do NOT benefit** your cluster at the moment? (external factor= outside the cluster)

The **EXTERNAL** factor/s that **DOES/DO NOT BENEFIT** my cluster is/are:

4) What kind of **changes** do you consider **necessary to apply** in your cluster to **achieve a greater competitiveness**? Please, choose from the list below, or create your own.

CHANGES

ATTITUDE

(Flexibility and/or trust between actors of the cluster)

POLITICS:

Provincial

National

Within the cluster

OBJECTIVES

(Common goals to be achieved)

STRATEGY

(The way in how strategic steps are handled in order to reach competitiveness)

STRUCTURAL

Infrastructure

Education level

Focus in external markets

Focus in internal market

OTHER

If **OTHER** was selected, please, **mention at least some of the changes** that you consider necessary to apply in your cluster to achieve competitiveness.

Changes I propose:

--

5) Which **tools** do you consider necessary to apply in your cluster **to achieve competitiveness**? Please, chose from the list below, or create your own.

TOOLS

TECHNOLOGY

INVESTMENTS

LOGÍSTIC

INTEGRATION

(of cluster actors)

SUPPORT

OTHER

(Financial Provincial and/or National)

If **OTHER** was selected, please, **mention at least some of the tools** you consider necessary to apply in your cluster to achieve competitiveness.

Tools I propose:

THE DYNAMICS OF YOUR CLUSTER

6) How would you rate the **collaboration between members** in your cluster?

POOR	SCARCE	GOOD	VERY GOOD	EXCELLENT
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If **POOR** was selected, please mention some factor/s that could help members to collaborate more efficiently.

7) Has your cluster ever **work together** with the local university/ies and /or educational institute/s?

YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
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If **YES**, **How often** does this collaboration occurs?

RARELY	SELDOMLY	OCCASIONALLY	FREQUENTLY	CONSTANTLY
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Were you **satisfied** with this collaboration?

NOT AT ALL SATISFIED	SLIGHTLY SATISFIED	MODERATELY SATISFIED	VERY SATISFIED	EXTREMELY SATISFIED
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8) Please, classify the following items (with a number) **according to the importance that they have in your cluster** and considering the following scale of value:

NOT IMPORTANT	SOMEWHAT IMPORTANT	IMPORTANT	VERY IMPORTANT	CRUCIAL
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Educational level of cluster members	<input type="checkbox"/>
Economical achievement	<input type="checkbox"/>
Political alignment/agreement	<input type="checkbox"/>
Enhancing products through innovation	<input type="checkbox"/>
Collaboration/cooperation between members	<input type="checkbox"/>

9) In what percentage the activities of your cluster are related to the **creation of innovation**?

0 – 20%	21 – 40%	41 – 60%	61 – 80%	81 - 100%
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10) In what percentage the activities of your cluster are focused on **strengthening the collaboration between members** of the cluster?

0 – 20% 21 – 40% 41 – 60% 61 – 80% 81 - 100%

11) How often do the members of your cluster **receive education on clusters**?

NEVER RARELY OCCASIONALLY FREQUENTLY CONSTANTLY

If **RARELY** was selected, please, indicate what would be a better frequency for educating the members of your cluster.

If **NEVER** was selected, please, indicate if you consider **necessary or not** to provide education on clusters to the members of your cluster:

Yes, education on clusters is necessary for my cluster

No, education on clusters is not necessary for my cluster

12) Does your cluster **share knowledge and /or expertise** with all its members?

NEVER RARELY OCCASIONALLY FREQUENTLY CONSTANTLY

If **NEVER**, please, explain briefly your opinion

13) How would you qualify the **level of importance** that the following drivers have **in the activities of your cluster?**

Driver (in this case) = Factor that gives reason or directs your activities)

DRIVER	NOT IMPORTANT	SLIGHTLY IMPORTANT	SOMEWHAT IMPORTANT	VERY IMPORTANT	CRUCIAL
ECONOMIC					
POLITICAL					
SOCIAL					
EDUCATIONAL					
INNOVATIONAL					

ON THE GOVERNMENT’S ROLE

14) In your opinion, **how long** (time) should **the government (public sector) be involved** in the activities of a cluster?

NEVER FIRST MONTHS FIRST YEAR 2-5 YEARS ALMOST ALWAYS
ALWAYS

My own opinion

15) Do you believe that the **provincial policies limit** the level of your **cluster activities?**

NOT AT ALL LIMITED EXTENT NOT SURE CERTAIN EXTENT LARGE EXTENT

If **LARGE EXTENT** was selected, please **explain briefly or give example/s** on **HOW** provincial policies limit the level of your cluster activities.

16) Have the **activities** of your cluster been **affected by provincial or national governmental decisions recently?**

NOT AT ALL	LIMITED EXTENT	NOT SURE	CERTAIN EXTENT	LARGE EXTENT
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If **CERTAIN** or **LARGE EXTENT** was selected, please, indicate **at which level** those decisions have **affected your cluster activities**

ECONOMIC	<input type="checkbox"/>	EXPORT	<input type="checkbox"/>	OTHER	<input type="checkbox"/>
PRODUCTIVITY	<input type="checkbox"/>	INVESTMENTS	<input type="checkbox"/>		

If **OTHER**, please, exemplify

17) If your cluster activities were affected by **provincial and/or national governmental decisions**, does your cluster have a **plan to moderate the impact of those decisions**?

NO PROBABLY NOT MAYBE/NOT SURE PROBABLY YES YES

If **YES**, please, indicate with at least **one (1) example**, how your cluster will moderate the impact of those decisions

--

18) In what percentage **regional policies determine the success** of your cluster?

0 – 20% 21 – 40% 41 – 60% 61 – 80% 81 - 100%

My own percentage: %

“Regional policies **DO NOT determine** the success of my cluster” *

*If this answer is selected, please, justify briefly **WHY** you think so:

--

ON SUCCESS FACTORS:

19) Indicate your **level of agreement** with the following statements:

“The success of the cluster which I belong to is mainly related to external factors”

STRONGLY DISAGREE DISAGREE UNDECIDED AGREE STRONGLY
AGREE

“The success of the cluster which I belong to is mainly related to internal factors”

STRONGLY DISAGREE DISAGREE UNDECIDED AGREE STRONGLY
AGREE

ON COMPETITIVENESS:

20) Is it **priority** for your cluster to achieve **sustainable competitiveness or at a short term?**

SUSTAINABLE

AT A SHORT TERM

If **SUSTAINABLE** was selected, please indicate if your cluster possesses the necessary conditions to achieve a sustainable competitiveness?

NO

PROBABLY NOT

MAYBE/NOT SURE

PROBABLY YES

YES

Thank you very much for your time and collaboration while responding this questionnaire. 😊

Final comments?

Script from interview with Dr. Alejandro Naclerio, coordinator of the local productive systems (clusters) program working for the Ministry of Industry of Buenos Aires, Argentina.

Date: May 2nd, 2011. Time: 16:13pm

Location: Ministry of Industry building. Buenos Aires, Argentina.

(Short introduction to the interviewee in Spanish to explain what will be recorded)

Interviewer: Ok, so I will ask you what do you think about these top down and bottom up approaches. In your opinion, are they beneficial or not for the dynamics of the cluster?

Dr.Naclerio: Both of them are beneficial, but I think that the government has a key role in formulating new clusters and reinforcing the existing ones. (I'm sorry about my pronunciation)...so clusters are not natural, so you need, especially in countries like Argentina, to create a policy to build up clusters. Clusters are a necessity because they are a kind of productive industrial policy basically. A good policy goes straight to the necessity of producers and producers are faced with a competitive world where they must face lots of problems and difficulties, this is a way of solving these problems. On the other side, a policy is an opportunity for growth. So cluster policy is relatively new. I think that the experiences that we had in Argentina have worked well in some cases.

Interviewer: So you are saying that so far you did not have any negative experience...

Dr.Naclerio: No, it's a new experience...as a new experience is difficult to say if is good or bad but in 2 or 3 years, I think, we will have lots of clusters in the country. There are already some that are very good and there are good expectations.

Interviewer: So, basically, the clusters that you are in charge or know about have been implemented top down?

Dr.Naclerio: Exactly

Interviewer: ...and you have mentioned that there have been some conflicts between the actors in the clusters. Now, how this program contributes and helps the cluster actors when there are conflicts?

Dr.Naclerio: Conflict exists always...

Interviewer: do you act as a mediator?

Dr.Naclerio: Yes, I think that conflict in economy is always present, as a real conflict or potential conflict. We have a methodology that we implement to minimize the conflicts. We have workshops in where we put all the cluster members together and we teach them with specialists, economist, psychologists, different ways how to behave all together, especially to minimize the opportunistic behavior. So we have a methodology that takes into account all those things. I mean, when we sign a contract in where we agree to buy capital good for the cluster, for example, we also make a commitment that they will work together and they will listen to our specialists who will teach them how to behave all together.

Interviewer: Ok, so you are well prepared in that case...

Dr.Naclerio: Yes, because we utilize that specific methodology.

Interviewer: Now, taking you to another question, we were talking earlier about the political and economical factors or external factors that can influence these clusters, have you experienced in any of the clusters any problem with political or economical measures that have influenced negatively or positively the clusters?

Dr.Naclerio: Yes, changes in the rules of the game. I think this is in Latin America a real problem, the permanence of the government. One thing is the government, another thing is the state. I recently received information that there is now a debate in the parliament about a law on clusters, and that will give more stability. Now they are beginning to talk about passing a national law about promoting clusters. But it must not be the government who implements this ideas, it must be the state. The state is always, the government is only those years they have the power. For the moment is an effort of this government. This program has began with this government in 2007-2008, more or less, so is a new program but is not incorporated by the state, but it think that it is necessary to be incorporated. If not, it will die. So this is a key question to take into account, to have the idea that is necessary to have a State policy, a public policy, and not a government policy. Now the discussion is how to make this stable. This policy will be very difficult to maintain in a long term.

Interviewer: I would like to ask you now about innovation. How important is innovation in the clusters that you are in charge of? Is the government promoting this or it happens spontaneously?

Dr.Naclerio: I would say more than 90% is the importance of innovation in each cluster formation. When you set up a cluster you look for innovation. If there is no innovation, there is no point in setting up a cluster. The key question is innovation, and innovation in a large sense, because innovation is not a new product or new process is

improvement. Do you know Schumpeter? he has a large definition for innovation. Also, organizational innovation, the soft innovation and not only the hard innovation. There is always a goal of innovation in each cluster project. If innovation does not exist, I will say that is an opportunistic cluster and not a real one. Moreover, innovation and innovation systems, a national innovation system where you include national institutions is the key question in our framework. Our theoretical framework is based on innovation and innovation systems, and system is a key word. Because the system is how to put together all the parts. The whole is more than the sum of the parts. That is a question in the clusters also, because things do not get benefit separately, but a collective will achieve a bigger benefit.

Interviewer: So you chose to use the word system, but for what you describe it sounds very similar to cluster...

Dr.Naclerio: Yes, in this case yes. You also have the word complex, or network, but I prefer system because system means that you have a connection, a link. That is why you have learning, technological progress and innovation.

Interviewer: From where comes the concept of local productive systems?

Dr.Naclerio: Is local because is localized in those areas where they need to improve their productive conditions. You also need infrastructure, education, competences and capabilities. These capabilities are no individual but social. You need policy to improve capabilities, and all this is a system. In this system is where you put all the supporting institutions.

Interviewer: So, can you tell me who has implemented this specific local productive systems program?

Dr.Naclerio: The current government has put this program into practice since 3 or 4 years ago...

Interviewer: Was the main idea behind it to enhance/ increase productivity?

Dr.Naclerio: The main idea is to reinforce the local production, to improve productive systems in general and create a policy, to generate competitiveness. Competitiveness with a long term perspective.

Interviewer: So you mentioned earlier that all this started back in 2007, so these clusters have been functioning already a couple of years. Can you rate the successfulness of these clusters?

Dr.Naclerio: In think that we have learned a lot about how to make a cluster. They are successful. Of course, everything has not been reached yet. I can say that we are never fully satisfied but it has been a good experience as we have many clusters all over the country. We do not concentrate in any specific part of the country but in general. We have had very successful experiences in small villages or towns, far from the big cities. There, we have used the concept of productive development and improve capabilities, connection with universities and so maybe in a long term we will have results. We have also good experiences from firms that have improved their benefits, but I think it is so short time that we cannot say whether this has been a good program or not. The direction is good, I can say. In the book I gave you there are some of these experiences with details.

Interviewer: So, since not enough time has passed since the program was implemented, does the program have some kind of system to measure the successfulness of the clusters in the future?

Dr.Naclerio: Yes, we have one. We make an associative plan for firms per year. After the firms are finished, we test them and ask them how they have improved, whether they have had difficulties, if they have been able to overcome these problems. This will be tested a year after. When the program ends, it may seem that everything is ok, but a year after the program we will come and will continue the work together. I think that a good cluster is one that is sustainable in time. We can say that there are lots of clusters that have been created by this program and they have been functioning together for 1 or 2 years but I would like to know whether they will be functioning 5, 6, 10 years and if they have grow and expand.

Interviewer: Is the relationship that the government has with the clusters a flexible one? Do the actors of the cluster have the chance to come and express whether they want to make changes or complain if something is not working, etc? Do they have a communication and is it good?

Dr.Naclerio: The communication is permanent. There is a continuous feedback with companies and local corporations, with institutions. We focus on the problem and we try it to solve it together.

Interviewer: Does this program have a deadline?

Dr.Naclerio: Yes, our deadline is in 2012, but most probably it will be extended for 2 more years. This is a program that is being monitored by the United Nations development program. We have a number of programs with the United Nations and they control what we do. Is not only the Argentinean government that is controlling us but also the United Nations.

Interviewer: Do you think that these local productive systems have a name that is easier to understand compared to clusters? Especially, here in Argentina, sometimes when you mention clusters people are wondering what you really mean...

Dr.Naclerio: Yes, is much easy to understand the local productive system than cluster. Cluster is an English word and even in English I am not sure if everybody understands what it means. It gives you the idea of something that is grouped in space but here you have the idea of working together.

Interviewer: So, do you think that if clusters would be called local productive systems, people will understand the concept better and will engage easier?

Dr.Naclerio: Well, is just a word...I could not say that it depends on the word. It depends rather in the benefits that the companies will obtain by engaging in the project. We use the name of local productive systems because is an explanation of what a cluster is for us.

Interviewer: Last, I will not take much of your time but I would like to ask you if you could please, say your name and your position here in the ministry so I can record it.

Dr.Naclerio: My name is Alejandro Naclerio. I am the coordinator of program of local productive systems, or cluster program in the Ministry of Industry in Argentina. I am an economist and I have studied innovation in economy in France. I have studied in Argentina, but obtained my PhD in Paris, France.

Interviewer: Thank you very much for this opportunity and thank you for all the information. I will certainly use it as part of my thesis.

Dr.Naclerio: You are welcome.

Informal Interview with Guillermo Salvatierra 13/09/2010

Skype (Internet phone)

(Introduction, Small talk)

Mr. Salvatierra starts the informal interview by explaining the reasons why the BID (international development bank) took interest in the clusters in Mendoza. He explains the case of the province of Rio Negro, similar to Mendoza, to open the conversation with a clear example. Later in the talk, he refers to the case of the clusters in Mendoza.

Mr.Salvatierra: All started when the province of Rio Negro ask the BID for 50 million dollars to make a project for regional development. At that moment Rio Negro province proposed to support the main economic sectors (pears and apples, technology and tourism). Not the word or concept of clusters was present then. When the project is outlined, the BID together with the province defines how the money will be spent. The province borrows the money from the BID and later it must give it back. The BID finances mainly development projects.

The province with the support of the BID called consulting companies for an international bidding in which 18 companies applied. One of the companies was the one I was working for, Competitiveness and we won the bid and so we started to layout the strategic planning for the province of Rio Negro.

In Mendoza something similar happened. The province presented a project with different components, like infrastructure, education, financing and cluster development. Inside the cluster development project, they were working with the clusters that have previously been identified. I think I sent you some papers regarding that...

Interviewer: Yes, you sent me some papers where you explained more of each cluster...

Mr.Salvatierra: Well, those papers belong to another project we did with Competitiveness in Mendoza. In that project, they hired us to make the mapping of all the clusters in the province of Mendoza. We made a map and from those 17 or 19 clusters identified, they chose 9 and they created initiatives for competitive enhancement.

Interviewer: So, you talk about clusters, but, were they called clusters then or they had the potential of becoming clusters..

Mr.Salvatierra: The clusters already existed, but as they did not have the methodological approach, the province called them forums. But forums were different than the clusters. For example, they had a forum of seed fruits and one forum of pit fruits, when realistically they should be only one cluster, the cluster of fresh fruits because the chain is the same. But at that time they had a more “agronomic” focus.

When we worked with the province, we insisted in that the province should organize the offer of public politic looking at the clusters instead of at those forums and try not to separate the sectors. As example, they also had the forum of wine and the metal mechanic forum. When we did the identification of clusters, we realize that the 70% of producers in the metal mechanic industry were manufacturing machines to serve the wine sector.

Mendoza did not have a cluster focus and it all started from the BID project. The hired us (Competitiveness) in the design stage so we could help them to brainstorm how it was possible to start a project of regional development based on the development of clusters. We helped then Mendoza and the BID to define a strategy. First, we identified the clusters and we explained to the province that the cluster focus is more effective than the one they used to apply. Once an agreement was reached, the project was designed and it is actually moving forward quite fast.

The following is a literal text written by Mr. Salvatierra. This text was sent via email and contains the interviewee's opinion about several topics related to the clusters in Mendoza.

- **VISIBILITY OF CLUSTERS (or lack of it)**

If we consider the case of Mendoza, it is interesting that in 2003 when they started, from the government, to think a regional development project with international funding which the axis is the development of local productive sector (mainly agro-based) they did not have a cluster approach. Until then the policy development of the productive sector was organized from the Production Forums, bringing together companies from different sectors and enterprises attended the sectoral manner and according to how they were organized in associations. These forums were of the type: Metalworking or seed fruits (pears and apples) or pit fruit (peach and others), etc. Clusters exist, but the traditional focus only "saw" the "sectors." That is why the value chains were shortened or different clusters were subdivided into different forums.

The wine was a forum that included the wineries and growers, but the specialist suppliers of machinery for wine were placed in the Metal mechanic Forum while bottle labels suppliers in the Graphic Forum. The problem with this is twofold: firstly in the metal mechanic manufacturers met with manufacturers of hydraulic turbines bottling wines, for example, and these two groups do not have many important common problems, while suppliers of wine have same challenges that producers of wine and technological or commercial dynamics in the former is directly determined with the latter. Moreover all providers of fruit (separated in different forums) were part of the production business by sharing fresh fruit packaging plants, canals, markets, etc, and therefore faced the same challenges. The cluster approach allowed to group them by competitive challenges that is how powerful the idea of the cluster is. If a group has shared competitive challenges, then, we can expect to take collective action to improve competitiveness. And this is the foundation of a politics based on clusters.

Then the issue of visibility was not for lack of such an approach, and is a relevant issue. Finally, Mendoza agreed to tackle the project with a cluster approach. To see this look at the consulting work we did and I sent you.

- **TOP DOWN AND BOTTOM UP APPROACH (GOVT vs FIRMS)**

The clusters allow bottom up approach, like forums but more effectively so that in the previous section. The interesting point is how to unite that which comes from below, clusters, which comes from above, the horizontal politics, because most of the money is spent on top down (formation of people, infrastructure, financing, etc. .) and this has great impact. But top-down decisions are made by educators and policy makers of infrastructure; they do not know the reality and the challenges of the companies grouped in clusters.

- **SOCIAL NETWORKS (Within and Outside clusters)**

This point is relevant, but in the case of Mendoza the developmental stage of development strategies and collective action of public-private coalitions is so basic that still would not pay attention to the subject.

- **INTERNAL AND / OR EXTERNAL FACTORS AFFECTING CLUSTERS**

This is the point of my work for the Univ Nac unid I sent you. It is a great track, both types of factors interrelate, but there is little literature about it and work, given that work mostly – due to the complexity of the issue - focuses on issues of internal factors.

- **CLUSTERS OF SUCCESS MEASSURING (Comparing all the agricultural clusters)**

In Mendoza we cannot measure anything yet, because the development of the experience is very

recent. Normally the impact of cluster initiatives is slow to mature, and there is great debate on what and how to measure.

- **REASONS BEHIND THE FAILURE OF AGRICULTURAL CLUSTERS IN MENDOZA**

Here, we enter into the considerations mentioned above. In any case we can measure the difficulties encountered to get to have a strategic plan or improve competitiveness, rather than the impact on business competitiveness initiatives.

- **WRONG UTILIZATION OF CLUSTER MODEL**

Again, it relates to the previous point. I think Mendoza errors arise from the weak conceptual understanding of the problems of clusters. These misconceptions lead to dead ends and errors of implementation.

.....

Maybe what you can focus your attention on the first stage, this is how you define a policy, identify clusters, which are the goals, and in what way we aim to implement it. This is from the time when a region is decided to address a policy of development, design and implementation.

Another issue is the treatment in the work of the UNU INTECH of transformation of the wine, and in part at the conference in Montevideo, where I compare mode as spontaneous development of a competitive process improvement in a cluster (wine case) and that can do from the public policy to promote it deliberately.

**Informal interview with Lic. Fernando A. Marquez , Agri-Food clusters Adviser.
Ex consultant for the agricultural clusters in Mendoza.**

Date: 18/06/2010

Skype (Internet phone) at 22:00Hrs.

Mr. Marquez is a cluster expert that has been involved in the clusters of Mendoza and has deep knowledge on how the clusters were developed in the province.

Since 2008 he has been working in the city of Santiago in Chile.

During the informal interview, he generally explains the situation of the clusters in Mendoza so as to help me get familiar with the topic of research.

Below, a summary of the main points he explained during the informal interview

The 4 agricultural sectors and the wine cluster were strong in the Mendoza economy. Wine is a strong product, but also olive oil. They are products with history, as it is same with the garlic. Argentina is the second producer of garlic in the world after China. Mendoza is also first producer of dried plum in Argentina.

All these products they were not formalized as clusters in the beginning but they have long history of working.

In the 4 agricultural clusters the process was an intervention or induction to work with the cluster methodology.

On the contrary, the wine cluster was born out of the crisis of the sector during the 80's. The crisis forced the sector producers to decide whether they get together or they disappeared. They were unaware that accidentally they were working under the cluster format. They started creating links with educational institutions, designing a governance structure.

The remaining 4 agricultural clusters did not achieve a governance structure. All the funds that were invested and the strategic package developed did not have anyone in charge of it. No one was taking care of implementing the strategy. There was not a Committee or directory in charge of checking whether the decisions made were following the strategy.

In the wine cluster the situation was different. They also utilized a political lobbying and got a strong support from the government. They have consolidated and structure called today the wine corporation. They count with own wine strategic plan (PEVI), human resources, sources of financing. Nowadays themselves they have achieved financing from the BID (Inter American Development Bank) for projects with small producers.

The existence of a governance structure to give sustainability to a cluster is very interesting and was not taken into consideration in the other 4 agricultural clusters.

The process was made in the 4 agricultural clusters but they got stuck in a point. They were not able to take the next step and consolidate a structure that guarded the strategy and initiatives.

In general world examples, we can see that the projects that were most successful were those that have been generated spontaneously and from the private sector, asking from the public support and not the ones that have been generated top-down from the government.

Government usually chooses the sectors and so is very difficult for these sectors to take off.

ABOUT THE QUESTION ON TO WHETHER HE BELIEVES THAT THE “LESS-SUCCESSFULNESS” OF THE AGRICULTURAL CLUSTERS RESPECT TO THE WINE CLUSTER HAS TO DO WITH INTERNAL AND SOCIAL DIFFERENCES, UNWILLINGNESS OF ACTORS, MISTRUST, MISUNDERSTANDING, ETC..:

There are different aspects to this. On one side, **the timing for developing the cluster program was wrong.**

When the program of clusters was introduced to the agricultural sector, the producers were going through a moment of intense growing of their exports, after the devaluation (2004-2005), the 4 agricultural sectors start to export and did not have any other thing in their mind than to produce more.

Obviously, that would have been the right moment to think strategically on how to sustain that “good” situation and so implement the clusters. But as they were going through a process of good fortune, they didn’t worry about the cluster formation and did not care.

In terms of mistrust between the actors in the agricultural sector, it is something that repeats in all 5 sectors in the agriculture, including the wine sector.

The crucial point is rather that the producers thought: why should they worry about implementing the strategy of clusters if they are earning money anyway? **Their mentality was very short-termed.** But this is an idiosyncratic way of the business men in Argentina and maybe even in Latin-America.

Their short-term mentality cause the lack of interest in clusters and now when they are having difficulties it could have been good that they have adopted the cluster tool to help them out of crisis.

In terms of responsibilities, there have been some failures in the design of the cluster program in the very beginning. Also people did not know what a cluster was.

It has been more difficult for some sectors than others to understand the dynamic of the collaborative work. The government role here is to help to communicate and facilitate all communicational efforts and provide coaching so sectors can understand what clusters are about.

The failures came from the government of Mendoza and from the BID (the financing institution)

At any point it was mentioned, and was not even written in the papers that these sector should constitute a governance structure.

TALKING ABOUT THE TOPIC AND DEVELOPMENT OF MY THESIS:

It could be interesting to find out what tools or methodologies are used in other countries (ex. Scandinavia) to measure the success of a cluster. Not only measuring the volume of exports of these sectors, but maybe measure their social capital

Interview to Mr. Alejandro Sejanovich (wine producer) Member of the wine cluster in Mendoza

June 24th, 2011 Skype (internet phone) at 12:25 pm

(Introducing each other, small talk, explanation of the motivation and topic of thesis)

Sejanovich: When you talk about cluster, do you mean the political/governance part of the business?

Interviewer: (I explained the reasons for my research and what I meant by choosing 2 clusters)

I understand that the wine cluster was born from the private sector and that the olive oil cluster emerged from the public sector...

Mr.Sejanovich: ...Yes...now I do understand what you mean by cluster. In terms of the institution, the union of producers and the government involvement yes, they do it through the COVIAR, but at the level of the wineries, the most important organism is now Wines of Argentina. This institution puts together all the wineries which have become members. Through Wines of Argentina, they work with the communication, the promotion of the Argentinean wine in foreign countries. They are focus on the export and not to the internal market. They also work with direct communication or through journalists. Journalists from other countries are invited and they can visit the wineries, taste the wines and they can write about it. This institution (Wines of Argentina) is working pretty well, not excellent; it has some weak sides but is what we have and what works better now.

Interviewer: For what I understood while talking with some people from the government of Mendoza, the wine sector is the best organized compared to other agricultural sectors...

Mr.Sejanovich: Yes, what happens is that in the wine sector you can escape from the commodities, according the price level of the wine, and the real business exists. The real business is possible as you can create a label, you can position it in a market. On the contrary, in terms of the olive oil, for example, they talk a lot about a label, but it is very difficult to separate the label from the olive oil commodity. On top of that, nowadays

the olive in Mendoza, has no value because all what it is European olive oil is subsidized and so the international price of the olive oil is very low. This year, at least in Argentina, the olive oil is not a good business and I am not sure if there are many labels that were able to separate from the commodity.

Interviewer: I see...my idea was also to see the differences between both sectors as I am aware that they are quite different and the wine sector has for example, a longer tradition with many years of experience, compared to the olive oil sector that is newer...

Mr.Sejanovich: ...at the industrial level, although the olive oil sector is a bit newer, they are about the same...in fact, olive oil has been produced in Mendoza for many years already. What is has changed drastically was the quality of wine in Mendoza, especially since the 90's and even strongly in 2000's and the olive oil has changed only recently and they have slowly created a quality that is more competitive internationally, but as an industry, the olive oil has existed for many years.

Interviewer: I understand that the olive oil cluster emerged from the government's initiative and also that a formal wine cluster exists joining together wineries, institutions, etc...nevertheless, I would like to know if there is a real tacit wine cluster. From your experience as wine producer and working in an important winery, have you witness this interaction between wineries, institutions, universities, etc?

Mr.Sejanovich: Until the mid last year, I was working as a general manager in the most important exporting winery called Catena Zapata. I am not working there any longer and now I work with own wines. My winery is not big, in fact we are just coming out to market, but I can say that when I worked for Catena Zapata, we did have agreements with the universities, with the INTA, to research, especially, technological research to enhance the quality of the wines. The research sometimes was going a bit further with links to the University of Davis in USA, Chilean institutions, France; those activities existed for us as a winery. This was not happening through Wines of Argentina, as they are focused on the image of the Mendoza wine and the Argentinean wine and the communication. Wines of Argentina activities are also supporting very slightly the commercialization but they do not have any research.

Interviewer: So...Are you saying that the wineries that are part of the called wine cluster are only the biggest wines companies?

Mr.Sejanovich: Well, that depends. I am about to come to the market with a new label and since a journalist visited the province and we are interested in having his visit, and we have made direct contact but without the sponsorship of Wines of Argentina we cannot welcome him, we will become members of Wines of Argentina.

Interviewer: So the wine cluster is not only for big wineries...

Mr.Sejanovich: No, any winery that is a member can participate.

Interviewer: ...and so after you become a member can you then start the collaboration with institutions like Universities?

Mr.Sejanovich: Not through Wines of Argentina. As far as I know, Wines of Argentina has never signed any agreement with any University or educational institution. They manage only the communication, nothing is related to research.

Interviewer: I assume you are aware of what it means to be part of a cluster and be able to share the network and from there on start to be more competitive, but for what you told me, it seems that Wines of Argentina does not take care of this issue...Could you tell me who is in charge of developing the competitiveness of the cluster?

Mr.Sejanovich: The market. At a commercial level, Wines of Argentina can organize some events where journalists from other countries can come and therefore they facilitate these kinds of events to be able to show the wines and the quality.

Interviewer: Ok, so I see that all the activities are mainly focused on the image and communication of the product but is there any institution that takes care of the enhancement of the value chain or how to make more competitive the cluster?

Mr.Sejanovich: Yes, there are some institutions, especially for small producers, that they are help, like for example Inexporta or ProMendoza. What they do is to help the small producers when they must go to some fair, for example, and they help them by paying the fair or shipping charges if they must send samples. But all these institutions are quite new. As I told you, the wine market in Argentina was a huge market in the 70's, the per capita consumption was around the 90 liters, then there was a crisis in the sector (80's) and nowadays the consumption is around 33 liters per capita. So there is exceeding production and just recently they have started to export with certain volume. So the export market is something quite new in the wine industry. The export market is quite profitable, despite the actual currency rate Argentina has, that is not favorable to export. As this exporting market is new, all these institutions of support are also new and they have a long work ahead.

Interviewer: When I talked to the members of the cluster Subprogram Mendoza Productiva, they told me about the olive oil cluster and that they focus their activities in to building trust between the members of the cluster and enhance the collaboration. So in the olive oil cluster, many initiatives coming from the government are aiming to better the internal part of the cluster. But for what you are telling me, it seems that the wine is quite many steps ahead. They are focused on the marketing and the international

markets and not much into the internal part of the cluster. Why do you think this is like this? Is it because there is a good communication between the wine cluster members?

Mr.Sejanovich: Yes. Basically the wine companies have not had a good communication in the past because they were competing with each other in the internal market. But slowly they realize that to be able to export they had to have a common message. From that point has emerged the necessity of making a cluster mainly focused on enhancing communication. The selling of Argentinean wine in other countries is quite new. To give you an idea, the consumption of Argentinean wine in USA which is one of the main markets for our wines is 2% from the total consumption, so there is room to grow. Obviously, we don't want to make mistakes such as Australia did in USA. Australian wine was growing steadily until many wineries merged and they started to export big volumes of wine with a cheap price to USA and that has created a poor image to the Australian wine in USA. This kind of situations is the one we try to avoid in Argentina as the market is growing strongly. Nowadays in USA, the two countries that are growing in the import are Argentina and Spain, so we need to communicate better. We have to explain to people that Argentina is a wine producer, where Argentina is located. Only part of the market has a clear idea where is Argentina, where is Mendoza, what is the Malbec. Those who have a clear idea, meaning journalists, sommeliers, people in front of wineries or restaurants, are asking information about zones. They want to know more about the place. Commercially, we must try that the wineries get better business deals, like it could be done in the case of Sweden, despite that they have a monopoly. We could try to see what we can do to get the monopoly to be interested in having a bigger share of the Argentinean wine, than the one that they have now.

Interviewer: True, in fact the presence of the Chilean wine seems to be stronger than the one from Argentina here in Scandinavia, for example...

Mr.Sejanovich: Yes, that is because Chile has been working on the wine export for many more years than Argentina. Chile exports its wines since the 80's or earlier and its market has always been the export since they do not have internal market for wine. The consumption of wine in Chile is about 4 to 5 liters per capita. Everything done over the years in Chile was thought based on the export. Their internal market was poor, with a scarce population and there was practically no consumption. Nowadays Chile is doing very well and that is related to the fact that they created a very efficient exporting strategy at the governmental level.

Interviewer: Yes, In fact, if I'm not wrong, I believe that Chile has been benefited with trade alliances with different countries...

Mr.Sejanovich: Yes, Chile during the years has made agreements with many countries. For example, in terms of the wine, Chile has special tax agreements since there are many countries with high internal taxes to wine. Chile has agreements in almost all countries they export, while Argentina has probably none. On the contrary, even with Brazil, and despite being part of the Mercosur, Chile has better agreements with Brazil than Argentina.

Interviewer: I see...so that is an opportunity to Argentina then...

Mr.Sejanovich: well, yes...but we must work...and that is the problem that we have here with the governments in Argentina...they are too worry about the work.

Interviewer: Now going back to the topic of the clusters, is there any external or internal factor that you see as non beneficial for the cluster?

Mr.Sejanovich: Well, the internal factor that is not beneficial is that at a governmental level we have a political issue. Politics in Argentina are constantly changing. One government comes and creates a law, and then a new government comes and changes it. This issue in other countries is not so easy. Besides there are many personal interests related to the government in turn that have nothing to do with the general interest. In this sense, only those who have more time to do “politics” can find some benefits to their own companies. In my case, as a wine producer, I go seldom to the city and have little contact with the government, so there are some opportunities that I lose because of this. In addition, everything goes very slow, very slow. If you want to do some project is not so simple...

Interviewer: ...So it is still quite bureaucratic?

Mr.Sejanovich: Yes, it is extremely bureaucratic. In my case, I prefer to concentrate in what I know how to do than trying to start something and wait for help.

Interviewer: Is the wine cluster also affected by these bureaucratic politics from the government, despite its size, or is it more independent?

Mr.Sejanovich: If we are talking globally, in terms of the importing politics of Argentina, we have serious problems with Brazil, for example. Argentina says: I'm not going to import anything from Brazil, and then Brazil closes its doors and says: Ok, the Argentinean wine does not come in. And Brazil nowadays is becoming of the main destinations for export, in fact is in the rankings as one of the 5 or 10th main countries importing wine from Argentina. So, the importing politics of the actual government makes very difficult the exporting of wines to Brazil, for example.

Interviewer: I see...so the wine sector it is being affected, despite the fact that is a strong sector...

Mr.Sejanovich: Yes. Nowadays in the agriculture in Argentina, the grain sector is the strongest. In fact, the grains are keeping up this government. All the cereals, especially the soja are allowing the incoming capital to Argentina.

Interviewer: Does the tax deferment still exist?

Mr.Sejanovich: Well, one was the tax deferment. Instead of paying VAT, you could invest in a province that they suggested and you had to give back the tax money after 8 to 10 years from the investment. Those deferments are no today anymore. Another type they had was the industrial promotion. There were places where you can build an industry and you could invoice with VAT, but did not need to pay it. The industrial promotion still exists but it is not so clear whether there are new beneficiaries or not.

Interviewer: So, is Mendoza nowadays in a less unfair situation?

Mr.Sejanovich: No, Mendoza is in the same situation because it does not enjoy of any of those benefits and in fact, never had them. I think that the only benefit that Mendoza had is that of a real economy. This is what has happened with the wine industry, is because there has been real business and not forced business. Sometimes you must be careful on how the government is involved I certain laws that generates temporary economies. These economies are not real. In a short term all is fine, but in a long run, it all disappears.

I believe that is important for the real economy to have a starting point that will make it work in a short and long term. Unfortunately, I think that in general the businessmen and the government make mistakes on which is the starting point. The starting point is the market. From the market you must see what the necessities are and produce those necessities. The problem that has always existed is that there has been production and once all is ready, they introduce it to the market. When you start by producing, you must invest much money, then in the case of the olive, for example, you must wait between 5 to 7 years until the olive plants can produce the right olives. The problem is that when you reach the production level, you find that you have lots of olives or oil and that the business is not profitable as you do not have a market. At that point is when the crisis starts.

One real example was the one of Neuquén. Neuquén is the province that produces most oil (petroleum). In fact, it produces probably the 80% of the petroleum of Argentina and it receives enormous royalties for it. At some point, with those royalties, the government borrowed to some friends' money to a very low interest rate, to develop the wine business sector. The province developed a big wine sector, with many wineries

and now you realize that at the moment they have planted the varieties, there is part of the production that they cannot sell it to anyone. They had all the structures and more, but nowadays it is not sustainable, they have loss.

Interviewer: ...So the time factor is crucial...

Mr.Sejanovich: Yes, the time factor but also the business must start in an opposite way. Business must emerge from the market's necessity. You can produce something but even if it is perfect, if the costumer does not want to buy it, you will never sell it.

Interviewer: In my thesis I have utilized also 5 drivers (Political, economic, social, educational, and innovational) to be able to measure the dynamics of each cluster and so I would like to ask you, what is the driver that better defines the dynamic of the wine cluster?

Mr.Sejanovich: The dynamic, I am not sure if of the cluster, but at least of the wine business in Mendoza is related to specific companies, like Catena that they foresee that the export was going to be a good business and so they opened a door for the Argentinean wines in the world. I believe that the strength of Mendoza that produces the 70% of the wine in Argentina and is the province that exports the most is that there is a good level of technical education related to the agriculture and wine making. Also in terms of Marketing and communication there is a good level. Besides, nowadays many students are interested in enhancing their education in foreign countries to better help the province. They are willing to invest their time and that is something in the Mendoza mentality. It is not related to the government or any institution, it is rather so that people sees that the business is real.

Interviewer: Could you say that the sector is innovative also?

Mr.Sejanovich: Very innovative. Mendoza made a total change in the quality and style of its wines and it is generating big innovation internationally. There are many people from other countries that come to see what we are doing here in Mendoza. They see that Argentina is making wines that are taking a place in the world market and winning to classical wine areas. Mendoza has made a change in its machinery too and has found a style that is very attractive to the young consumer. I believe that the young consumer is the future as he will be the one who pass the message to new generations, while the old consumers belong to the old world type of wines.

Interviewer: In your opinion, do the provincial policies limit the activities of the wine sector?

Mr.Sejanovich: In general, if one thinks about what has happened over the last years the government of Mendoza has been trying to help the wine industry. They understand

that the wine industry and the agriculture as a whole generate economies. The viticulture needs lots of working hands; this is very different from the soya industry, for example, where they can cultivate many hectares with only one person in a tractor. In a vineyard, for example, every 10 hectares, you might need an average of 3 to 4 people, plus the people you need in the winery, plus the people in charge of the commercial part. This generates a real economy and allows an active population in the fields.

Interviewer: The amount of resources, in this human resources is it abundant or scarce in the sector?

Mr.Sejanovich: Depends on the area. If you have a vineyard close to a bigger city, is complicated to get workers to work on the fields as they prefer working in the city. Far from the city, the culture of the people is more agricultural...

Interviewer: How about resources like machinery?

Mr.Sejanovich: Yes, there is machinery. However, one of the problems that they are currently solving, related to the topic of the closed imports is that you could not find tractors, so I had an investor that wanted to plant his vineyard and we could not find tractors. We could not buy a tractor because there were not. There were not existing tractors in Argentina because the import was closed.

Interviewer: Was this finally solved?

Mr.Sejanovich: Well, so so... basically the pressure from the government is that if you are an importing company, you must be also exporting. Therefore, some companies agreed to open factories in Argentina to manufacture tractors, so now they were allowed to bring in certain volume of them.

Interviewer: According to what you say, it seems that the government that causes more problems is the national government and not the provincial...

Mr.Sejanovich: Yes, it is true. Nowadays the problems come from the national government as they want to show a macro economy with certain commercial balance but they bring complications to the business. They make decisions in short term, thinking more about the elections and numbers they can show and do not care about creating a real economy.

Interviewer: Now focusing on the interaction of the cluster members, could you confirm that the wine cluster has a good communication and that there is a good integration of members or not?

Mr.Sejanovich: Yes, I think that the wine sector, for the Argentinean standard, let's not compare it to Chile, is constantly developing at the institutional level, innovations.

Today the business exist and generates an economy that is beneficial for a big part of the province and so the last think a government wants to do is to disturb. On the contrary, the government has realized that they have to help promoting the viticulture and mainly the business. The main problem that arises in the wine production is the over production since it is then when the prices fall and crisis starts. One of the main goals for the sector is to better the commercial part, especially the exporting. We need a better communication strategy as the wine is not a commodity and so we must explain why it can be expensive at times.

Interviewer: Do you mean internationally or internally?

Mr.Sejanovich: I mean internationally. We must explain why an Argentinean wine can cost more than a French wine, for example. We must invest in that type of communication to our consumers. We need to get the consumer to taste the wine and once they have tasted it, they will make a decision.

Interviewer: and what about research...do you believe that the wine sector needs of more research work done?

Mr.Sejanovich: Yes, always. But the research has been always attached to efforts of the companies and not from efforts from the institutions. The problem is that many times, the institutions have objectives that are academically related and they do not take into consideration the commercial objective. But luckily that situation is slowly changing. Nowadays the young people studying they have connections to the people working in the wineries and vineyards and so they do understand much more. Today, the University of Agrarian Sciences in Mendoza has agreements with other international universities such as Bordeaux, Montpellier, Washington and they also bring professors from different countries. They have been quite innovative in that sense.

Interviewer: I am aware that you had the opportunity to work in Catena Zapata, one of the most important wineries in Argentina and now you do have your own winery, during all these working years have you heard about clusters? Has the topic of clusters been popular or you have been working jointly with other sectors but not knowing that you were a cluster?

Mr.Sejanovich: Yes, I have heard about the clusters mostly at an institutional level, although I have not focused much on it.

Interviewer: Have you heard about clusters in terms of conferences, or events where they explain how clusters work or what they are?

Mr.Sejanovich: No. Today the industry, even if it is generated from clusters, is focused on working and setting up conferences about the technical part, to better the quality of

the wines and especially the part of communication and commercial. Every year marketing specialists, journalists and other experts are invited.

Interviewer: Is there any type of meeting between wineries and maybe also inviting small producers to talk about the sector?

Mr.Sejanovich: Yes, yes. There are forums and some technical associations.

There are many clusters that have emerged from investments in the agriculture. The BID (Interamerican Development Bank) has invested by giving credits in Mendoza through the Fund of transformation and growing. This fund works very well as it gives funding to the agricultural sector to buy for example the hail-control fabrics. Mendoza has very important issues with the hail. They also help with quite soft credits to acquire new irrigation systems and also for general buying as machinery, etc...

I think that the most important issue in Argentina is to obtain credit. In Argentina is very expensive to obtain credit/loans. Sometimes the government also helps with subsidies but you must generate lots of paper work and you might get the money invested in 2 or 3 years and in pesos but with the inflation, there is almost nothing left.

Interviewer: So, for what you are telling me it seems that the main investments in the wine sector not only come from the IDB but also from the private sector...

Mr.Sejanovich: Yes, that is true. The general problem that the viticulture has is that generates a status and so many people, external from the sector, come to invest money and this sometimes can generate unbalance in the business.

Interviewer: Is there a big competition in the sector?

Mr.Sejanovich: Yes. There are in fact many wineries owned by French people that are established in Mendoza and have made a huge investment in technology and extensive vineyards but they cannot make it profitable yet. The truth is one can sell expensive wine, that is not a problem, but you do not sell volume then. The wine must have a good base price that allows you to sell volume too.

Interviewer: I would like to thank you very much for all the information you gave me and especially for your time. Thank you again.

Mr.Sejanovich: No problem! Thank you too.

Script from interview with Prof. Veronica Araniti (University of Agrarian Sciences)

Date: February 22nd, 2011 time: 14:30 pm

Location: Universidad de Cuyo, Mendoza

Interviewer: Hello Veronica, I would like you to tell me about the history of this tasting panel and its connection with the olive oil cluster.

Mrs. Araniti: Ok, Solange, first let me tell you our webpage address:

www.agrarias.uncu.edu.ar

That is the website of our faculty and in there we have the tasting panel. The idea is to keep it update, but as we have other activities, this becomes difficult. This tasting panel emerged actually as an extension of our activities.

As a part of the activities that a university professor must take care of here in Argentina, are those related to build a relationship with the environment. As this Faculty is rather agrarian, it is very much related with its surroundings or environment and therefore we became part of this project.

This project came down from the government of Mendoza, through a sub program called Mendoza Productiva. They started a project to create groups that could work within the cluster system. We presented a project and the partners are the UNCUYO (Agrarian Faculty), the Exterior chamber of commerce of Cuyo, the olive sector committee of Mendoza, two big producers and two small producers. So, between all this participants, we decided who was going to take forward this project and we end up doing it, but it took a long time until we really understood what was the main idea or motivation for this project.

It was especially difficult for the remaining participants too, although they were interested in the project, to find what was that they needed from it. They wanted to give an added value to a product as the olive oil in Mendoza. To be able to do this they needed to measure the quality through sensorial parameters. Many different proceedings took place and were closely supervised by the BID. There were many meetings with proposals, re validation of proposals, etc...until a group was created, and one of the conditions was the members to be at least 3 and from different sectors. This group then presented a project to the government of Mendoza. And it was so that we enter the project to create this tasting panel of olive oil.

I and Mrs. Bauza we had been working on the olive oil and on the quality control, physical and chemical analysis and sensorial analysis. What we did for the sensorial analysis was much reduced and it was not given the importance that it has now. We had only few resources and scarce methodology. We liked to be involved in the project as it was going to give some kind of continuity to what we have been doing for years and that is why we decided to participate.

Because we have been so involved and due to what the university represents in Argentina and the social responsibility, is that we were chosen to be leaders of the project: Technical leader and influential leader. As Mrs. Bauza is a bit more social than I, (I am more operative), I became the technical leader and she the influential leader. Those were the titles that we were obliged to use when we formulated the project.

We organized the project and try to keep the group united, we set up meetings, made a contract between parts, we signed an agreement between the Mendoza government and us, and as we are not independent actors, that who represents the olive oil cluster is the rector of our University.

The rector of the University, Mr. Arturo Somoza, grants the functions to Mrs. Bauza and me.

This has different stages, for ex. Stage 1: creation of the project. We set up all Mrs. Bauza and me representing the entire group. On stage 2, once the project was approved, the building of this facility took place. And finally on stage 3, that is all what comes to the work and community service, Mrs. Bauza and I are still the responsible for it so far.

This started in 2006. In 2006 we had the first meetings, proposal meetings, etc...we presented the project in 2007, in July approximately. The project was finally approved in mid 2008. They granted us the financing at the end of 2008. All of the members of the group started to write down what were their needs and who wants to do this, who is interested in that and so on. So things were accommodating slowly. Groups were forming according their common interests.

Interviewer: So, this is a cluster that it is not closed...members can enter or leave...right?

Mrs. Araniti: Yes, I do understand that this is like this.

Interviewer: My question is because yesterday, talking with Mr. Panasiti and Mrs. Rappacioli from the subprogram of Mendoza productive, they mentioned that do not have any statistics on how many are the members of the cluster, as they rather measure how many can get benefit out of the cluster.

Mrs. Araniti: Well, inside the olive oil cluster there are different projects...so this is not the only project...have they told you about them?

Interviewer: what they told me is that the tasting panel is a very important project for the olive oil cluster...

Mrs. Araniti: But this is only one of many projects...

Interviewer: What they also told me is that the majority of the projects have come from this tasting panel and they did not spoke about other projects...

Mrs. Araniti: ok...what happens is I am not sure how they have been following up the other projects...I know that we had to do lots of paperwork, filling up of documents, bank statements, etc...we have the sponsorship of the university. I am not sure if they have mentioned it to you and I do not know how they have handled this as I believe they do not have a clear idea themselves either...The BID was granting a financial support of the 50 percent of the total of the project, that meant that the remaining part was to be granted by the counterpart. From this counterpart, practically the 90 percent of that 50 percent was given by the UNCuyo.

Interviewer: oh...that is quite high...yes, they have mentioned to me that the financing was shared...but did not mention the numbers...

Mrs. Araniti: Yes, that is because the government do not have it clear yet, but we do as we have handle this project. Nevertheless, the project was approved like that, but the percentage given by our Faculty included the building of the taste panel in this location, a residential area and therefore expensive, plus the general infrastructure and the personnel since we are University professors and also must work for the project.The university invested a lot for this project to be successful and to become part of a community service too.

It has been very hard for us to try to integrate the olive sector in Mendoza as it is a sector that has some old fashioned working structures, they find very hard to cooperate in any form. We as responsible for the project had to set up not only the formal aspects of it, but also asking the remaining members to collaborate with their financial support as they have initially promised.

Interviewer: Now, when this project started, have you been given a deadline for this project to end?

Mrs. Araniti: Yes, 18 months.

Interviewer: So...in 18 months it has to...

Mrs. Araniti: ...we are already in the time limit of 18 months...18 months was the deadline from the time the money is given for the project to the moment when we must show the results of our activities...after that the project should function normally socially...but under the supervision of the university.

Interviewer: So, this tasting panel has had already activities in this building?

Mrs. Araniti: Yes, it has been functioning since beginning of 2010. There is a working group. In the tasting panel we have to observe two different aspects: the building part and the human part, the group that works here performing the sensorial evaluation.

We can go and see the posters we have over there...there is reflected the history of the tasting panel...we can also see the auditorium...here we hold the meetings and is when a group from different parts of the province. The group was pre selected, trained and now they participate from the tasting sessions. We are currently working to see if this group can be recognized and get the official accreditation from the Comité Oleícola Internacional (COI) (Spanish Oil Committee).

The group is formed by 24 people who get together twice a month and they do come from different parts of the province.

Interviewer: Are these people specialized in some way on the olive oil?

Araniti: There is a mix...the only excluding point was to have a high sensorial sensitivity when we started to call out people.

Interviewer: ...and so how did you prove their senses?

Mrs. Araniti: Well, first through what they said and then through different tests we did while selecting the final group...

Interviewer: ...so you were testing whether they could identify certain characteristics or not..

Mrs. Araniti: that is right, if they identify the sweetness, the sourness, the salty, etc...So through tests, we were narrowing the selection.

Our first meetings were at the park and other places like universities. When the group was reduced, only those with the higher motivation remained. The motivation factor was very important because these people are coming from very far away and becomes difficult to make them participate if they are not truly motivated or interested.

Already back in 2008, we hold the first meetings with the group. We originally invited people to participate by making a public promotion of our program through tv, radio and newspapers. We gave a date and time and about 100 people came.

We have, as you can see from this poster, two different aspects: the human and the structural. This was the existing building, and this is how it has been built.

The university participated by financing almost the 90 percent of the remaining 50 percent that we shared with the BID. If we count the land, the pre existing building, infrastructure, and the salaries of people like us, because we have not received any extra money for taking care of all this, the salary we receive is what the university pays as teachers we are.

Interviewer: ... I see...so, do you have any kind of flexible time given by the university to be able to take care of this matters?

Mrs. Araniti: Not really, this is rather an extra work for us. That is why sometimes we are very tight because we must go on with this, but we also must continue our work as university professors, as researchers, and also I am part of the council of the faculty and so I have activities on that front too.

Here you can see that the group can be trained both in an open round table, as well as in individual cabins.

...here they have the trays with different oils to be tasted. Sometimes we also used different lights to hide the oil color, so the tasters will not see the color of the oil they taste.

Interviewer: How long it usually takes the tasting sessions?

Mrs. Araniti: We usually have two hours sessions.

Interviewer: So, the olive oil producers have never had their oils tested this way before?

Mrs. Araniti: No. Never.

Interviewer: So this is helping them quite much...

Mrs. Araniti: Of course, this gives them a wider knowledge about the oil they produce and a certificate from us.

(Wrapping up interview as the interviewee must go)

Script from interview with Mr. Panasiti (Specialist agro-food clusters. Engineer Agronomist) and Mrs. Rappacioli (Cluster Promotion General Manager) Mendoza Productiva.

Date: February 21st, 2011. Time: 10:30 AM.

Location: Government house, Cluster office. Mendoza, Argentina

Mr.Panasiti: Araniti and Bauzá are the natural leaders from the Tasting Panel and they have an extensive relationship with the Olive Committee.

Interviewer: Is there any leader in the Olive oil Cluster?

Mr.Panasiti: Well...We work through initiatives and they both are the leaders from the Tasting Panel but at the same time, in that Tasting Panel the olive Committee is involved, the Agrarian Sciences University, Business men who are related to the committee, a school of Tasting and other companies. The tasting panel is currently working with different individual projects in medicine, in biotechnology; they have different programs with which they are working alone; we have set them free because here the idea is to help them during the initial moments and later they must go on working by themselves, so they prepare meetings, they have business meetings, they get together with different associations. Other leader is Fabian Nuñez who leads an association of small producers and they represent them. They do not have the same layout of the tasting panel that has main business leading figures, is functioning at the university and it is much bigger.

Interviewer: So...the main initiatives about the Olive oil cluster do come from the tasting panel or from any other association or institution?

Mr.Panasiti: I will explain you how this all started...back in 2005 we launched some workshops and to those workshops we invited to all those people who were in one or the other way related to the olive oil. Initially, they were identified the clusters with which we were going to work and from there it came the idea that the olive oil should be one of them. We invite participate the entire sector and out of the motivation and different workshops they came up diverse initiatives, some with more priority than others. From those initiatives that were priority, we started to work with the consulting company. The initiatives can start but if they do not possess a strong leader, they stagnate and end up falling.

Interviewer: Is there any limit in time for the initiatives that you have started?

Mr.Panasiti: Once we start the initiative, there is no time limit but the program had a deadline set...

Interviewer: So in 2005, there was a deadline set?

Mr.Panasiti: No, in 2005 we made a general opening and there we work and initiatives ought to be approved, because after the launching workshops, we made validation workshops where initiatives presented in the launching workshops had to be validated on a 51 percent by the members of the cluster who originally had participated, so there we made a list where we prioritize specific initiatives.

Always with the minister, we support the producer...in our case; it is always the producer who directs the initiative. In the second level of the pyramid, we have the service providers and they get involved in the tasting panel, and at the third level or base, we have the institutions that normally the province has had, because the province had experience of working with similar strategies and so based on past diagnostics that we had made with other consulting companies.

Interviewer: So basically, when you have an initiative, how long time is giving to it to be able to say that it worked or it did not?

Mr.Panasiti: When the initiative comes in, it is analyzed by the managing group. Firstly, a leader is identified. Before, we used to go to the field and search for initiatives and forcing the participation, nowadays, they come with an idea, we analyze them and we determine what we can finance and what we cannot. If we see that the initiatives can be adapted to the co-financing that the program allows, we accompany them, we meet and after the initiative is presented, and after it is approved by the managing group, it goes to the supervisor of the program, they give the ok, then it goes to the executive director of the program, and then it is presented to the strategic committee. The strategic committee is formed by the ministers of production, the sub secretaries of industry, tourism and the production and quality, they analyzed them, they create a memo, and once they approve it, there are two ways: it can be asked to be modified, if the committee considers that is excessive, or it does not fit into the province demands or the pre established strategic plans of the province, it can be asked to be adjusted or not. If nothing is asked, then it goes through supervision and control to the area of project approval and there once is approved, a record is made and a contract it is signed between all beneficiaries: the technical leader, the influence leader, and the legal representing figure. This last one is who signs the agreement between the financing unit and the other beneficiaries. Usually, a certificate is given at this instance and from there on, the time is set.

Interviewer: But now, all this process that you have previously mentioned, it occurs in a short or long period of time?

Mr.Panasiti: Sometimes the process is jammed at the instance where the contract between the beneficiaries must be signed. Usually, inconvenient happen at this stage because it is where we demand that they do not have any previous debts with the state, the legal background of each is investigated, specially, from whom is responsible for signing the contract and therefore is where some problems can arise, generally there are mistakes like they have forgot to pay some tax, etc..and so the process is stopped temporarily until the inconvenience is solved. In general it is more problematic when a contract must be signed with institutions such as it happened with the Universidad Nacional de Cuyo where the legal representative is the Rector. They have chosen him and so there must be a legal norm where the University authorizes him to sign the paper, so there it arises an additional problem that usually, it is not present. Sometimes it can be involved the INTA (Instituto Nacional de Tecnologia Agropecuaria) (National Institute of Agrarian Technology) and it gets complicated because its director is in Buenos Aires and so we must travel there and get it approved, so ...

Interviewer: So...it goes case by case..

Mr.Panasiti: Yes, it goes case by case and cases are very different. But what it takes more time is usually the contract signing and then the granting of the money that generally happens in two separate instances. From there on, they have 18 months to execute the project. It can be that the project gets a longer deadline, as it is with the tasting panel as the project has been continuously growing but for them to give back the funds...

We demand a co-financing, partly is their own with a 30 to 50 % (this can vary according the project)...in the case of the tasting panel, they have participated with a big percentage as they are supported by the university but anyhow we always try to make sure that the participation is 70 to 30 maximum. So later on, they must render part of the funds, as we do not give them finance of the second part if we have not seen results from the first stage.

Interviewer: So there must be some results within the 18 months...

Mr.Panasiti: At the beginning of the initiative, we make a survey, quite similar to the one you sent us, where we evaluate if the members are satisfied with the managing sector, if the sales have increased, but it's very individual as it is difficult to measure in the tasting panel where their activities are not directly productive, you cannot see the immediate benefits...we usually encourage them to answer the survey as they are

sometimes a bit skeptic to do it...but generally they answer it. Survey it is made first after 6 months and then after 1 year...

Interviewer: So, to summarize about the olive oil cluster, and talking about its layout, for what I can hear, the tasting panel has a crucial role in this cluster...

Mr.Panasiti: Yes, there are involved, producers, businessmen, academia, institutions, it takes almost the entire chain....even providers collaborate...they want to bring new products... the tasting panel has a wide attraction...also they make trips to workshops, to promote products, etc...

Interviewer: So, the tasting panel has a direct relationship with businessmen in the field?

Mr.Panasiti: Yes, direct

Interviewer: ...and what about with the small producers?

Mr.Panasiti: Well, we have a case that started to work with where 6 to 8 small producers had a problem that they have to sell their bulk production to a very low price and so they wanted us to help them to obtain a higher added value...in the beginning they wanted a machine, and we analyze it and we decided that they had enough machines, we advised them and in their case we asked for a modification of their initiative, because they have raw material, in the program we realize that the best was to keep the production and for them not to have to sell in a rush it was better for them to have a storage and a way to fraction the production. They finally understood that this was helping them, and nowadays they have compromise.

We value very much the social capital; it is for us very important...if there is no trust between participants, no initiative it is possible.

...so, on this frame, the small producers also uses the tasting panel to analyze their products and that way they have received awards and started to work harder and participate in different initiatives. They have also compromise to conform a legal group, although we do not demand that from them, but they want to give a legal frame in order to create a more sustainable activity...so nowadays they are already 32...when only 8 have started a while ago.

Interviewer: So, the tasting panel has a real direct contact with the small producers?

Mr.Panasiti: Yes, they can approach them at any time; they can provide them with courses, and inside the contract it is stipulated as the university is also compromised to produce information that can be used for academia. It was also proposed that all investigation that the tasting panel has made can be used for a program in where they

have analyzed the different types of clones of the most common type of olive that we have here in Mendoza and that it is called the Arauco, and that is the one that provides the most oil. As a first initiative, we subsidize as they decide to investigate how many types of clones we have here in Mendoza. All this studies are made everywhere in Mendoza and many participants are involved. We do not participate monetarily, but they are still working in different projects...they are in fact actually in contact with the faculty of Medicine, to study the incidence that the olive oil can have in the fertility of the men, for example. We do not finance, but they keep on working...All these are parallel activities but we cannot measure them...if we really had to measure all the benefits that those activities could bring it is impossible because all this was not previously thought in this projects.

I consider that sometimes we are a bit rigid when we use tools to measure the success or not of different initiatives, because some start and never end and all this comes out of our hands.

Interviewer: Now, what is the role of this Cluster program when it comes to the Social Capital, you mentioned that it is important, but I mean the social capital inside the cluster?

Mr.Panasiti: We try to keep the group always united and in terms of the social capital, we always go when they need us, we make workshops, and we try to motivate them so everyone knows each other in the group. We measure from time to time the group to see if it has consolidated or how long time it might take until it is consolidated. And it is there where the trust begins, as when they have to sign the contract between beneficiaries, we can see if the group it has consolidated or not.

It is not a demand of the program, but we like when there are participating more and more beneficiaries, specially the small producers.

If you look at the business layout of Mendoza you can see that in reality we do not have big companies, they are rather small and medium companies that are associated to other companies..

Interviewer: So...there is not clear business leaders?

Mr.Panasiti: Yes, the leadership exists but it is divided...the producers and the businessmen but they do not get together when it comes to commercialized, they do not agree at the time to define the price of the product. And so in that sense we try to help and is something already defined in our strategic plan. We try to keep it as beneficial for the producer as for the exporter.

Interviewer: Now, is it measured in numbers how many members the olive oil cluster has?

Mr.Panasiti: Well...we really have the number of the participants...we measure actually based on the initiatives...we have measured in the very beginning of our meeting and they could be almost 200 people, but I really prefer to measure it in terms of how many are the initiatives...32 are beneficiaries...35 with the tasting panel...it is difficult to measure how many beneficiaries there are...the committee has about 25 firms...plus the university, plus 3 private firms...difficult to say as the activities of the tasting panel can benefit many firms...

Interviewer: Does the olive oil cluster keep a relationship with the wine cluster?

Mr.Panasiti: The relationship that I can see is based on the roads...especially when it comes to tourist. You have the wine roads and the olive roads get together...although it is not the same. Also the gourmet aspects benefit both. In reality, many times they are the same participants, as for example the Zuccardi family who are wine producers but also olive oil producers.

Interviewer: Taking you back to the Social Capital subject, at any point it was measured the sociability inside the cluster because I know that in many parts of the world it has been used a tool called Social Network Analysis that measures the social network inside the cluster. Do you have any idea if this type of measurement has ever been performed here in Mendoza?

Mr.Panasiti: Yes, we have measured at the initial point and that was what helped us to choose the clusters that we were going to work with because originally we have identified 21 clusters and out of those we kept only 9,that measurement was made by a consulting company...

Interviewer: So., is this a kind of tool with which you could be able to see how the relationships are built inside the cluster or determine the flow of communication between cluster members?

Mr.Panasiti: No, we do not know that kind of tool. Actually, that step should take place now...

Mrs.Rappacioli: ...To be able to use that kind of measuring tool, we should take this in a long run...We are still a small cluster program and we are trying on this province to change the way of thinking that small producers have or people that works, so they can work together. We do our activities through small initiatives. We try to teach them the cluster politics...this is the 5th year that we work on this...we have seen from last year

how this have matured...so we can do some measurements, but in reality that will be applied more in a long sight.

Interviewer: Does your program have a time limit?

Mrs.Rappacioli: Yes, we are now reaching the end. At the beginning this was programmed in two stages of 5 years each...and so...we are the end of the first stage and we must start the second stage soon but this is part of a negotiation that the BID (Interamerican Development Bank) with the government of the Province...but as we are on an election year, this is not going to happen this year and they will do it next year. We currently have an extension so we can work as now until 2012, and then they will negotiate to try to extend to the next 5 years. Most likely at that time, there will be also new objectives and goals to be achieved, but all this is just very new and is still difficult to get people to trust in each other, to work together...

Interviewer: So, after these 5 first years, have you done some kind of summary of results?

Mrs.Rappacioli: yes, this is what we have to present this year and we have to work on this. Statistics we do not have yet and we have to work on them too. We have worked last year with the strongest groups and now we have more time to prepare statistics and results.

At this moment we have to analyze the results of the program by making measurements and check which cluster functioned better, whether we will keep supporting the same clusters or we choose to support new ones.

Interviewer: As I have commented to you before, I am preparing my thesis that is related to both the olive oil and the wine clusters. The idea behind collecting information trough the questionnaire and interviews is to try to understand how this two clusters function, as they are quite different for what I understand so far...

Mrs.Rappacioli: Yes, the wine cluster is much more developed in the province and it has been heavily supported...

Interviewer: For what I understood, perhaps the most distinctive difference, although not pure differences, between these two clusters is the fact that the olive oil cluster has been rather implemented from the government...?

Mrs.Rappacioli: Well, no...The difference is that the wine sector is better organized and the olive oil is not organized yet...not all the actors in the cluster are as organized as it is within the wine cluster.

Interviewer: However, we could say that the olive oil cluster emerged from this governmental cluster program...

Mr.Panasiti: Yes, from the strategic programs that the province had at the moment when the diagnosis was made...

Mrs.Rappacioli: well, during this program it was decided that we could help some clusters that needed more development, not the wine cluster as this is already developed, it receives support and they work already in different areas...so we thought that it was better to support the olive oil cluster to see what we could do and help them to work in a more organized way.

Interviewer: So, we could then say that the olive oil cluster is therefore implemented by the government...

Mrs.Rappacioli: Yes, ours is a program that emerges from the government but there are also investments from the private sector...the cluster is natural...it already exists...we only help...

Interviewer: I had rather the idea that the wine and the olive oil clusters differ in terms of the way they were implemented...as the wine cluster emerged from the producer...

Mr.Panasiti: Yes, the wine cluster we can say it was more spontaneous...

Interviewer: ...and so then the olive oil came from the government...

Mrs.Rapaccioli: Well...but the olive oil and wine clusters are not in the same place...they are not at the same level at all...the only one developed in the entire province is the wine cluster.

Mr.Panasiti: The wine cluster came as rather a necessity, as they went through a deep crisis and they had to get together because they were disappearing. I believe that after each crisis, development begins. When it comes to the olive oil sector, when we came to the picture, it was when they were slowly growing.

Interviewer: The idea behind one of my questions is also to analyze how some factors (political, social, economical, educational, innovational) do influence the clusters...how do they build the dynamic of the clusters...

Another idea to explore during this interview was also to see whether there is any difference between both clusters in terms of the way they were implemented (Government or privately)

Mrs.Rappacioli: In my opinion, all clusters must have support from the government, always...

Mr.Panasiti: Yes, there must be an intervention when there is a problem, not direct intervention but they must work together...

Mrs.Rappacioli: ...clusters cannot be independent or imposed by one or the other...there is always a need to work together.

Interviewer: Another question that I will be exploring in my thesis is how the clusters can moderate the influence (political and economical)...

Mr.Panasiti: ...excuse me, but do you see wrong the state participation in the implementation of clusters?

Interviewer: No, the idea is rather to take these two clusters and see if there was a difference in the way these two were implemented...explore the benefits or not from having the government more or less involved in the activities of the cluster...

Mr.Panasiti: ...I would say that we need more time...there is an age factor also. Remember that in the wine cluster, they have gone through generational changes and now you have a third or fourth generation of people who originally started the cluster...besides they have had foreign influences...the BID has asked me also why do I think that the wine cluster is better developed...and I answer that they have had foreign influence also...European firms came bringing along all their knowledge to be applied in the wine sector and therefore they were able to develop faster. I think that this will also happen in the olive oil sector, but it may take a few more years.

The key thing is time.

Interviewer: So, in your opinion, there are not really significant differences between a cluster that has been implemented by the government to the one implemented by the producers?

Mrs.Rappacioli: No, to me is rather so that the participation of the producers or private sector must be strong and they must be supported by the government always.

Mr.Panasiti: ...In one way or the other the government must participate...maybe not permanently, but they must support, with political measures, laws, this kind of programs, education, etc...

In Europe they see this differently maybe...

You must be able to understand that Mendoza has a very particular diagram in production...how many producers we have from 0 to 5 hectares, how many we have from 5 to 10 hectares and what use of the land each of those producers have. When you see this kind of diagram you will understand that in the olive sector the majority of

producers are from 0 to 5 and in the wine sector they are in the range from 20 to 50... those who are within 0 to 5 or 5 to 10, they are at the same level in terms of cluster development. But the sector is growing and will go on that way.

Interviewer: Will you say that there is any difference in the result if an initiative is implemented from the government?

Mrs.Rappacioli: Initiatives must always come from the private sector and government must support but if they emerge from the government and go down to the producers they never work. Government role is to support. We have granted subsidies but the idea is to slowly remove them so we can represent support without becoming just a place where people come to get money.

If the idea emerges from the government and the private sector is not attracted to it, it will simply never work.

Mr.Panasiti: This is clear for us and experience tells us so.

Interviewer: Another question related to my thesis has to do with what the clusters can do to moderate the influence of external political and economical factors?

Mrs.Rappacioli: I think that from the cluster, the private sector could get organized by creating a chamber being represented in some way to be able to intervene and ask for support when needed or try to change something, or ask that the things change politically. The most important is that they have someone to represent them, and that they are an organized sector.

Interviewer: How do you think that innovation can contribute to minimize the external factors that influence the clusters such as political or economical?

Mr.Panasiti: We value very much innovation and in fact there are different ways of financing for innovative ideas.

Interviewer: Based on the tax difficulties that the province of Mendoza has suffered in the past, how can the producers or cluster members through innovation or differentiation get rid of these restraints?

Mr.Panasiti: We are in fact working hard on encouraging the differentiation through the quality of the products and already the olive oil cluster has been working on analyzing the quality of the oils coming from different oasis or productive regions in Mendoza. We do support constantly innovation.