INTERNATIONAL FOOD & AGRIBUSINESS MANAGEMENT ASSOCIATION
19th ANNUAL WORLD SYMPOSIUM
Budapest, Hungary
June 20-23, 2009
"Global challenge local solutions"

AGRI-FOOD CLUSTERS AND COMPETITIVENESS. INTERVENTIONS IN TWO PRE-CLUSTERS IN URUGUAY

Authors: Palau, Hernán[1]; Senesi, Sebastián[2]; Neyra, Facundo[3], Mogni, Fernando[4], Vilella, Fernando[5].

1. PROBLEM STATEMENT

Although it may sound paradoxical, in a globalized economy many competitive advantages reside in certain local factors. As we resolve the paradox of geographical location in a global economy, we may discover how businesses create their competitive advantage. Today, the world economy map is characterized by what Porter calls "clusters": critical masses of companies that act in related industries, all settled in one region.

Geographical and cultural proximity provides companies better information, tighter relationships and other advantages hard to come by for distant competitors. Porter (1990) explains how the companies must be configures, how they can contribute to universities and what type of promotion governments must develop.

According to Porter (1990) clusters constitute geographical concentrations of interconnected companies, specialized suppliers, service providers, companies in related sectors and connected institutions (such as, for example, universities, standardization institutes, commercial associations) that compete but at the same time cooperate. As critical masses of unusual competitive success in certain areas of activity, clusters constitute a salient characteristic of all or almost all national, regional and even metropolitan economies, especially those of advanced and economically developed countries.

The fact that clusters, rather than isolated companies or sectors, predominate in national economies bears witness to the nature of competition and the role of location in competitive advantage. Even though the reasons that led to the formation of clusters in the past may have lost importance in the face of the ongoing process of globalization, the new role of clusters in competition is becoming more important within the frame of a knowledge-based economy. The presence of clusters indicates that most of the competitive advantage lies outside the company, even outside the sector: in the locations of its operation units.

Clusters encourage competition and cooperation. Rivals compete intensely to make and maintain their customers. Without vigorous competition, a cluster would fail. However, there is

[1] Corresponding author: Hernán Palau. Research Area Responsible. Food and Agribusiness Program, School of Agronomy, UBA-Argentina. Email: hpalau@agro.uba.ar

[2] Corresponding author: Sebastián Senesi. Sub-Director Food and Agribusiness Program, School of Agronomy, UBA-Argentina. Email: ssenesi@agro.uba.ar

[3] Corresponding author: Facundo Neyra. Coordinator Food and Agribusiness Program, School of Agronomy, UBA-Argentina. Email: neyra@agro.uba.ar

[4] Corresponding author: Fernando Mogni. Food and Agribusiness Program, School of Agronomy, UBA-Argentina. Email: fmogni@agro.uba.ar

[5] Corresponding author: Fernando Vilella. Director Food and Agribusiness Program, School of Agronomy, UBA-Argentina. Email: vilella@agro.uba.ar

also cooperation, mostly vertical, in which companies of related industries and local institutions participate. Competition coexists with cooperation because both take place within different dimensions and among different players. A cluster of companies and institutions with and informal connection represents a solid form of organization that offers advantages in terms of efficiency, efficacy and flexibility.

According to Ordóñez (2002), at present the only feasible competitive strategy is to develop alternative strategies focused on collective processes in the formation of social capital. In this sense, clusters constitute a highly competitive alternative of organizational design in global food and agribusiness. The different agrifood pre-clusters and clusters, their development and their impact on company competitiveness have not been sufficiently studied in our region.

The process of clustering in the sectors “hand-made cheese” and “vegetables” in Uruguay will be described in the following paper. Hence, the objective of this paper is to present the intervention method and the main results of the formation of clusters in Uruguay, by working with two pre-clusters: “hand-made cheese in Colonia” and “vegetables in Salto”.

First, the paper will describe the method of the intervention. Then, a description of the two sectors will be carried, in form of institutional, organizational, technological and commercial environments diagnosis, and we expect to identify forms of intervention, needs of the actors before intervention, results and implications of the activities developed, strategies recommended for each cluster. The paper will conclude with recommendations for future interventions in other agrifood clusters in developing countries.

2. THE INTERVENTION

The intervention and strategic development proposals for the pre-clusters “hand-made cheese in Colonia” and “vegetables in Salto” took place in Uruguay. The intervention arose as PACPYMES, a public organization linked to the Ministry of Industry of Uruguay, hired the work team of the Food and Agribusiness Program of the School of Agronomy, University of Buenos Aires, Argentina. It’s important to mention that this work team was hired for the hand-made cheese sector first and, because of the successful of this intervention, PACPYMES decided to hire the team again for the “vegetables in Salto Cluster”.

Even though the two sectors are different in terms of type of product and perecibility, the limitations were similar: commercial constraints, high level of intermediation, lack of good agricultural practices, problems with food safety and quality, standards undefined, small scale of production, lack of information of markets and consumer demands, low associative capacity, little knowledge of new markets and consumers, strong influence of domestic consumption, low value added.

The two pre-clusters were selected by PACPYMES due to: 1) high possibilities to become a real cluster, 2) strong willingness to form a cluster by the participants, 3) existence of public and non-governmental organizations in the region. In this type of institutional interventions always the question is “is the cluster formed or the Government should promote, facilitate and finance the cluster formation?” In our opinion, cluster initiatives could be identified (the clusters pre-exist) but the actors should be willing to develop it and Government should accompany the process. The two cases in study represent Government intervention in cluster development.

When a pre-cluster is identified, all the activities should be focused on developing it. As a result, the following actions and activities should be performed (based on Ordóñez, 2000; Neves, 2007, Senesi, 2008 and authors’ experience)[6]:

[6] All the intervention should take place through meetings with the actors of the cluster, but, above all, with the leaders and the public sector, who have most influence on collective decisions.

Action	Activities

1) Diagnosis of the sector *(study the actual and historic situation in terms of an institutional, organizational, technological and commercial study)*	• Bibliographic search (secondary sources, past authors that describe the sector)
	• Interviews with (primary sources):
	  o Producers-intermediates-industrials-traders
	  o Leaders (consultants-presidents of associations)
	  o R&D centers (Universities, Public and Private Organizations, etc.)
	  o Local authorities
	  o Ministries workforce
	• The diagnosis should include a SWOT analysis

2) Validation of the diagnosis	• Presentation of the diagnosis to be evaluated individually by the actors of the cluster
	• Workshop with all the participants
	  o Discussion of changes in the diagnosis
	  o Discussion of the SWOT's
	  o Evaluation of the SWOT's (ranking of most important)
	• Revision and re-writing of the diagnosis

3) Final document of diagnosis	• Summary of main findings in diagnosis • Possible forecast and short-term objectives

4) Collective appropriation	• Benchmarking activities:
	  o Propose a trip to other region/country with cluster's participants
	  o Propose lectures and seminars with experts in the sector to study
	• Workshop to discuss possible short and medium term objectives to enhance actors' participation
	• Summary of common thoughts and possible future objectives

5) Elaboration of vision and strategic lines	• Prepare the actors for the vision (pre-vision workshop) • Perform a workshop to establish a common vision and common strategic lines • Redact a document with the main findings of the workshop • Present the document in a public instance (re-discuss of the strategic lines)
6) Propose a vertical organization of the cluster (enhancing competitiveness)	• Design a vertical organization compound by representatives of the actors of the clusters (vertically) • Facilitate sources (finance and consultants) fir implementing the organization
7) Implementation of the strategic lines	• Empower the organization (to follow the vision and strategic lines defined previously) • Workshop for re-defining or completing new strategic lines

Source: the authors

The basic premise of this paper is that in order to form agrifood clusters, a diagnosis must be performed first. This diagnosis has two main parts: analysis of the sector in the world and description of the institutional, organizational, technological and commercial environments of the sector being analyzed in the country. It is very important to have almost all the bibliography written about the sector in study first and then, try to work in workshops with participants for collective primary data. The diagnosis should finish with a SWOT analysis.

This diagnosis should be validated by the actors of the cluster, using for example a workshop to resume the topics seen and a consideration of the different points listed in the SWOT analysis. The validation has the objective to compromising the actors and fine-tuning the results. The validation could be very important to do a revision of the diagnosis and a re-writing of it, in case some results were not considered before.

The final diagnosis document should have the acceptance of the agents and its findings should be the fundamentals for the elaboration of the common vision and strategic lines. Within it, it is stated that for a sector or enterprise it is highly important to think strategically 3-to 5-year horizons, focusing on the market, on the target consumer.

In order to facilitate the interiorization of possible changes in the pre-cluster, the intervention should perform activities to generate "collective appropriation". That means that other participants should be integrated and "common-thinking" activities may be important. Some activities could be related to benchmarking –doing a trip or inviting experts to the region-. Other could be related to discuss possible short and medium term objectives. A summary of this intervention is very important: participants and others that do not participate should have a document that resumes this step.

Based on Senesi (2008) and Neves (2007), the point 5 is related to defining the final objectives of the cluster (share vision, collective mission, and common agenda). The objectives should be the most realistic and focused on future scenarios. The possibilities (scenarios) must be discussed by the cluster's actor and the benchmarking is critical for this stage.

It is very important to propose the idea of a vertical organization of the cluster. In order to establish the cluster, it's important to generate a common business culture, by the framework of their own public policies. The actions should be to strengthen the cluster. This vertical organization should be designed and should have plans to do. Should have some manager and consultancy council. The organization should be formal and it should have the responsibility to execute the strategic plan. The vertical organization must internalize the actors' initiatives during the vision and stregic lines workshop. We propose that this organization must be designed after the vision and strategic lines process (workshop), but before the implementation of the initiatives.

The intervention continues with the implementation of the strategic lines. Following Senesi (2008) and Neves (2007) it is very important to:

- Be aware of new winners and losers
- Ethic and trust between agents (regional and vertical relationship)
- Institutional environment
- Innovation
- Social capital

Following, the results of the diagnosis and planning strategy of both clusters under study will be described in the paper. A comparison will also be made of the results of the intervention of each of these clusters.

3. THE “HAND MADE CHEESE-COLONIA” CLUSTER

3.1. Introduction to the sector

The “hand-made cheese in Colonia” sector has large history in the Uruguayan agri-food production. Its beginnings were during the 19th century due to the European immigration. The brought the culture of producing cheesed in an artisanal way (Gilles, 2006).

The sector represents more than 2,000 small and medium producers with no more than 40 cow each producer and average production of 7 liters per day per cow (see table 1). 75% of producers are located in a radio of 150 km of Colonia. Even though the level of technology invested is low, cheeses have great quality –if we consider them in terms of organoleptics aspects; form, flavor, color, etc.-. Most of the production is commercialized to the domestic market; local consumers do not care so much about quality and prices are not so high. The production represents 8% of total milk production in Uruguay (10,000 tons of cheese, 120 million of liters of milk).

Table 1. Productive data.

		Average size		Productivity	
Total cows in production	**Hectares**	**Total cows**	**Hectares**	**Liters per day**	**Liters per ha**
46,365	134,048	38	110	267	885

Source: Gilles (2006)

3.2. Intervention process

The diagnosis process started in October 2006. The actors of the pre-cluster “hand-made cheese in Colonia” have been working with PACPYMES since March with the idea of making a cluster in that region. Diagnosis process took two main workshops of 40 participants each (many participants attended to both workshops) in order to get primary information. Secondary information was collected searching in bibliography and papers. The workshop had the following objectives: a) open a discussion space for possible strategies and tactics, b) contribute in a participative way (and starting with the cluster initiative process) in order to have the all the possible data (in terms of institutional, organizational, technological and commercial aspects), and c) generate trust between “hand-made cluster” agents and with the PAA consultants.

As a first result of the diagnosis participative, the actors mentioned that cheeses are well-known internally, but its reputation is mostly captured by intermediaries or distributors. Producers have low level of bargaining power and generally they sell their production directly to intermediaries, who catch the value added of the products. Producer organizations, in order to face this commercial problem, are not common: there are not collective actions in order to selling better their production, either adding value (i.e. certifications) or collective marketing. At the institutional level, there were two regulations that regulate the “hand-made cheese”. One accepts the pasteurization of milk and the other not. This ambiguous framework implies an important threat in terms of food safety and access to markets with greater restrictions. Technologically, although the cheeses have good quality –organoleptics-, neither GAP nor GMP certifications are implemented, and many producers have facilities with low level of technology in terms of food safety. The fact to designing and developing a cluster organization is seen by Government and producers an important tool to change the present restrictions.

After this first stage of diagnosis, the PAA’s consultants continued with the process of designing a common vision and strategic lines. To do so, a benchmark activity has been proposed: producers attended to Mercoláctea, one of the most important Argentine dairy sector fair. This trip was very useful to create trust and generate a common perspective of what can be done. This common analysis was simple to produce higher quality of cheeses in terms of international standards in order to supply to the most demanded markets in the world.

With this idea, the vision workshop has been launched. The cluster's participants[7] lived 2 days altogether in a hotel far away from their cities in order to wok only in that activity. The natural leaders (producers and public force) played an important role, but the workshop turned very difficult to achieve a common vision in the first day of working. The role of the consultants of PAA was very important to focusing the discussion and finally, the participants declared their vision:

"well-known by exigent markets because of a quality hand-made cheese elaborated by Uruguayan rural families"

After this declaration, the participants elaborated the three principal strategic lines and activities to achieve them:

a. Quality group: "Elaborate and apply proceedings to guarantee a reliable product".

The activities planned to this group were:

- Training in GAP and GMP.
- Implementation of GAP and GMP
- International consultancy on quality standards and tipification

b. Positioning group: "Positioning the Uruguayan hand-made cheese in the most exigent markets".

The activities planned to this group were:

- Develop a market study of the domestic market, identifying quality and quantity demanded.
- Design alliances with commercial channels that look for differentiated products.
- Promote the product in fairs and shopping centers in Montevideo and Punta del Este.
- Elaborate a video to presenting the sector in different fairs.

c. Family group: "enhance the participation of hand-made family in order to strength de dialog and public-private coordinated actions".

The activities planned to this group were:

- Communication plan of the cluster: to producers, to consumers, to public organizations and the State, etc.
- Formalization of producers (fiscal and sanitary formalization).
- Look forward new participants in the cluster initiative.

3.3. <u>Procedures, results and impact</u>

PACPYMES continued facilitating resources (human and financial) for this cluster initiative. The facilitator continued his role and the actors started with the first group of the strategic lines ("quality group"). The market study was done too, but actors did not use so much the information: They did not see the importance of this study yet.

[7] 22 participants: 11 producers, 3 inputs suppliers, 4 public sector, 1 cooperative president, 2 labs representatives, 1 technician. The different area they came from was very important in this period of the cluster initiative.

The recommendation of the PAA consultants was to design and implement the formalization of the cluster initiative. As a result, this cluster needed a vertical organization –as it is mentioned in the cluster intervention method- which should have internalized all the strategic lines and common vision mentioned before. In this vertical organization could become part producer, intermediates, public sector, technicians, inputs suppliers and all the participants of the cluster. The vertical organization was not launched and the success of the cluster initiative will continue depending on the government assistance.

4. THE "VEGETABLES-SALTO" CLUSTER

4.1. Introduction to the sector

"Vegetables in Salto" (Northwest of Uruguay, 500 kilometers from capital city), also has large history of production and they are specialized in producing out of the regular season in the south of Uruguay. The production represents 20% of total Uruguayan vegetables production (gross production value: 25 million dolars), but most than 90% of the production in winter time entering in the Montevideo market (the main market in the country, 1 million people) when the south production is still immature.

The vegetable production has mainly tomato, chili, onions, sweet potatoes and strawberry. Tomato and chili concentrate 81% of total production. They are 500 producers, with no more than 50 hectares each. In total, 2,200 hectares are seeding and around 400 hectares have greenhouses. 50 producers have high level of technology and important yields. The rest of the producers usually present low level of technology and several production problems (quality and quantity).

However, both types of producers have the same problem: they face several problems to commercialize the production in the domestic market, because the prices have been falling down and costs increased 40% in the last 3 years. Margins are decreasing and exports do not seem to be the solution. Many producers are disappearing (selling their farms) and concentration of the production is a fact. Cluster initiative could be a solution for this sector in Uruguay, in order to enhance competitiveness in this sector.

4.2. Intervention process

Cluster initiative in this sector started in November 2007. The facilitator started to work by March 2008 and he started to work in a first diagnosis. The PAA consultants entered due to the success in the prior cluster intervention. Participative diagnosis was done and was useful to find the leaders and those with high commitment on the initiative.

In that sense, it was observed that the pre-cluster has three producers' organizations in Salto and one in Bella Unión, resulting that collective actions in technological environment were common. Many producers participate in meetings and workshops of these organizations: the culture of participating and trying to solve problems collectively was present.

The diagnosis had the following main results:

- Good level of technology in 50 producers (conditions to export and technology leaders)
- There are experiences of collective actions, especially for technological aspects but not for commercializing or buying inputs collectively.
- There are some producers with access to the stock market, but mostly all the producers suffer the asymmetric info of intermediates.
- The presence of INIA (National Research Institute) office in the region in order to develop new varieties and technology.
- Many producers with low incomes because of low level of technology and production.

- No presence of contracts (spot market). High level of asset specificity (not aligned to the market governance structure).
- No GAP implementation
- Little implementation of management tools (software or administrative intervention).
- There is a possibility to export to other MERCOSUR countries (Argentina and Brazil)
- Concentration of the production and many producers are disappearing.
- Very small domestic market.

In December 2008 a new workshop with 30 participants was done in order to validating the diagnosis and trying to perform some strategic objectives. Some of them were: to consolidate the producers' organizations, to develop an institutionalization of the cluster initiative by introducing a vertical organization, to do a benchmark trip, to make training courses for technicians and producers, to study new market opportunities and business plans, to strength lobby actions with government or consumer associations, to work together for cooling capacity.

By April of 2009, the project is still working on the common vision and strategic lines. However, some actions have been performed in order to continue on the cluster initiative. The actors decided to start with a domestic market study. Interviews with consumers and intermediates were done during February to April 2009. This study is financed by PACPYMES. The results of the study are not completed yet.

On the other hand, they decided to start a benchmark initiative: a trip to Argentina in order to see other productive realities and to look for contacts for future trading. In this trip (April 2009) participated 34 actors of the cluster and they have the possibility to make contacts with market agents in Argentina. Moreover, they had the chance to see other productions and vegetables. Finally, they saw during the trip examples of typical vertical organizations for the sector.

Cluster organization, promoted by the Government (PACPYMES), has been the decision the producers did in order to solve the constraints. The actions producers will develop would be: organizations for buying collectively, organizations for selling their production collectively, a seal in order to identify the production in the sheds ("Product from Salto"), Good Agricultural Practices, funding an organization that will study and identify commercial opportunities (observatory) and the vertical organization. This is the challenge for the future.

4. CONCLUSIONS

In developing economies, the best possible competitive strategy is to develop alternative strategies focused on collective processes, on the formation of social capital. In this sense, clusters constitute an alternative of highly competitive organizational design in global food and agribusiness.

The pre-clusters under study are at a stage of cluster initiative formation, trying to create strong trust among the actors, and beginning to observe competitive signs typical of a cluster (collective actions). The process of cluster intervention and the development of strategic actions for solving the producers' problems have been described, but the results each cluster had are different. The "hand-made" cluster did not internalize the proposal of being a cluster. The formation of a vertical organization was the key factor to the formation of this cluster.

On the other hand, "vegetables-Salto" cluster is in the process of elaborating the common vision and strategic lines. However, the mature of the leaders and some organizational forms before this intervention seem to be the key of creating the cluster. The possibility of formalizing a vertical organization is accepted by producers, local authorities and national Government. The cluster would have a solid public-private partnership (PPP) in which the actions will internalize the strategic lines and common vision.

We can resume that the method presented take care on the importance of collective actions and dialogue in a cluster formation. Cluster's leaders and consultants should be in the same line of thinking and recommendations would be discussed. But the most important thing is the governance of the cluster initiative: the vertical organization represents who takes the actions that the agents designed during the common vision and strategic lines process.

The base of the method presented is to perform a participative diagnosis and its validations, benchmarking, elaboration of a common vision and strategic lines and the PPP design (vertical organization) and its implementation following the objectives planned. The actions mentioned are useful to create trust and enhance the social capital. Culture and people of the different pre-clusters will not be a threat to start. Clusters need people to be designed. The clusters need leaders and capacity of share vision. Social capital is the key.

5. REFERENCES

Gilles, J.C. (2006). Documento informe: relevamiento del punto de partida del cluster de la quesería artesanal de San José y Colonia, Uruguay. PACPYMES.

Neves, M.F. (2007). A Method for Demand Driven Strategic Planning and Management for Food Chains (The ChainPlan Method). International Food and Agribusiness Management Review (IFAMR).

Ordóñez, H. (2000). Nueva Economía y Negocios Agroalimentarios. Food and Agribusiness Program. School of Agronomy. University of Buenos Aires.

Ordóñez, H. (2002). Aportes metodológicos de estudio e intervención de los agronegocios. Una teoría, tres modelos y tres casos. Asociación Argentina de Economía Agraria. Buenos Aires. October.

Porter, M. (1990). Competitive advantage of nations. Harvard Business Review, p. 73-93, March-April.

Senesi, S.I. (2008). Estudio y Planificación Estratégica del Sistema de Agronegocio. Food and Agribusiness Program. School of Agronomy. University of Buenos Aires.