Discourse analysis of local and global food supply chains in Catalonia – A case study for the GLAMUR project

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Résumé:

L'étude sur les chaînes d'approvisionnement agro-alimentaire assure la responsabilité de prendre en compte toutes les différentes visions des systèmes alimentaires, soutenues par les acteurs qui sont répartis sous différentes sphères : marché, publique, politique et finalement, la sphère scientifique. Chacune de ces sphères expriment des discours distincts qui représentent les visions de la chaîne agro-alimentaire, elles-mêmes influencées par le rôle de ces acteurs dans la société, leurs valeurs partagées ainsi que leur condition socio-économique. La présente étude cherche à saisir les perceptions reliées à la performance sociale, économique et environnementale des chaînes alimentaires locales et globales, à travers l'analyse de discours. L'investigation repose sur deux logiciels complémentaires (Atlas.ti & Alceste), qui permettent la comparaison de la perception des acteurs en rapport aux modèles de production et de commercialisation dominants et alternatifs. Finalement, il apparaît que la majorité des acteurs ont une opinion positive en regard à la performance sociale et environnementale de la chaîne agro-alimentaire locale, par rapport à celle globale. En ce qui concerne l'aspect économique de la performance, deux perceptions opposées se démarquent : la sphère du marché perçoit positivement les effets de la compétition globale puisqu'elle prend avantage de sa position sur les marchés ; en revanche, la sphère publique voit d'un point de vue optimiste les modèles de production et de commercialisation alternatifs puisqu'ils permettent d'augmenter les opportunités des producteurs agricoles quant à leur accès au marché et à une équitable distribution des profits.

Abstract:

The study about food supply chains assumes the responsibility to take in account all different visions about food systems, argued by four distinguish spheres: Market, Public, Policy and for ultimate, the Scientific sphere. Each of those spheres embodies various discourses representing food chains' visions, influenced by their role in the society, their shared values and their socio-economic context, (…). The present study dares to capture perceptions about social, economic and environmental performance of local and global food supply chains through a discourse analysis. The inquiry is realized by two complementary softwares (Atlas.ti & Alceste), that permits the comparison of actors' perceptions about dominant and alternative food chain models. It finally appears that majority of food systems' actors have a positive vision about the social and environmental aspects of performance of local food supply chain, than the global food system. In relation to the economic aspect, perceptions of performance are shared into two opposite points of view: market sphere perceived it as positive due to its positioning statement that permits to take advantage of the effects of global competition; in contrary, public sphere seems to have an optimistic point of view concerning alternative models of production and commercialization, mainly due to the increment of opportunities for farmers in terms of access to the market and equity of distribution of profit.

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1. Introduction

In the actual changing context regarding politico-economic circumstances, social tendencies and environmental concerns, study of food supply chains seem to arrive in good time. Various factors such as the important demographic increment, the ageing population, the increase for many of life standards; along with climate changes, greenhouse gas emissions, oil scarcity and others, induce numbers of people to re-question the pertinence and the legitimacy of the current exiting food system. For many of them, a strong and meaningful reformation of the neo-capitalized and liberated-markets' model should be examined and probably reconstruct under more ethical and sustainable constraints.

In the contemporary world, rules have changed: consumers ask more and more for healthier products with higher value added[1], for diversity, accessibility, low prices, (etc.). In contrary, cost of production are increasing, competition among firms is becoming each time more intense, pressure on nature is palpable everywhere, resilience of ecosystem seems strongly affected, while the richer is richer and the poorer is even more poorer. The effects of globalization, in concordance with the promotion of a fierce capitalism, engage governments and societies to reposition themselves as part of a greater system, but also as consumers of agro-alimentary products.

The major consequence of this specific and complex situation has led to significant changes regarding performance requirements of food supply chains as an entire organization, but also for all segments that composed it (Van der Vorst J.G.A.J., 2000). For instance, more and more agents of the food chain seem interested to "shortcut" it, with the objective to have a stronger influence on the final price to the consumer and also to give more information on the product. Changes in the overall food chain can be related to consumer's requirements –quality, flavor, nutritive value, etc.-, to regrouping farmers or distributors in cooperatives, to new governmental program that facilitate the service of organic local food products in schools and hospitals, to encourage farmers to reduce their ecological footprint, and much more.

It is in this particular context that the European Union mandates a three years project operating in 13 different countries and 15 research centers and universities, named *Global and Local food chain Assessment: a MUlti-dimensional performance-based approach* (GLAMUR project). Its principal aim consists in procuring scientific advancements regarding to food chains impacts and their possible sustainable future, through the instauration of public policies and other private strategies (GLAMUR, 2012). To do so, the proposal is divided in seven work packages: 1) management of secondary data; 2) determining attributes to assess food supply chain; 3) data collection; 4) comparison of local and global food chains; 5) participatory integrated assessment; 6) policy analysis and 7) dissemination. This Master thesis is based on the second work package, named *Scoping/Framing: Analyzing the communication of*

[1] The term value added refers to original agricultural product that has seen its value increase by the labour (transformation of aliments, addition of vitamins and minerals, etc.) or by the creativity of the producer. Particularly for small farmers, it is an interesting avenue for development as it cans permit to distinguish aliments from others and demand a higher price for it (Hi-Ag Tourism Association, 2013).

food chains and their performance. The main purpose of this work is to conduct an analysis of discourses around food chain performance by setting attributes across a range of determined dimensions (GLAMUR, 2012).

Then, within this framework, the present work contributes to analyze the communication of food chains and their performance in order to scope and frame the project research. The country of Spain has been determined as part of the study; nevertheless, because of the important prevailing differences among Spanish regions, the case study will give a special attention to the Autonomous Community of Catalonia. In this sense, this document identifies the main discourses around food supply chains in Catalonia and defines the relevant attributes to assess their performance.

1.1 Justification of the project

In addition to the previous mentioned motivations to realize such a research, the 2013 reforms of the Common Agricultural Policy (CAP) by the European Commission appears as a supplementary justification as it can contributes to the CAP new objectives (EC, 2013):

a) Reinforcement of competitiveness and sustainability of agriculture;
b) Maintain the presence and economic activities in the regions;
c) Developing criteria for quality and healthy food production;
d) Preserve the environment and encourage the development of rural areas.

This short enumeration, figuring as new goals, seems directly link to the current topic of the document. Those considerations about increasing system resiliency, empowering local initiatives, furnishing more information to consumers (etc.), are all linked with the need expressed through the main theme of the present document: analyzing food chains performance perceptions.

1.2 Primary description of food supply chain

Food supply chains are here understood as complex network systems worth it by series of complementary activities, organizations, information and agents, characterized by distinguished interests. Regardless the organization, the most basic supply chain is composed of producers, manufacturers, suppliers, distributors, retailers and finally consumers (Nagurney A., 2006). At a first level, all partners involved in the different steps of the supply chain aim to the same final objectives of: 1) satisfying people's needs and demands, 2) assuring a certain economic growth and financial autonomy to the enterprise that transforms raw material and primary resources into final alimentary products. Then, at a second level, all actors are motivated by different interests that depend on their scope, activities and roles, as it will be treated further on.

In the succeeding, the objectives, frame of references, as well as the methodology will be described and explained. Finally, results and discussion will be presented, following by conclusions.

2. Objectives of the thesis

The master thesis document aims to contribute to scope and frame the second part of the GLAMUR project research. That is, it analyses the communication of the performance of food chains made by different actors in the Spanish territory, more specifically, in the Catalan Autonomous Community. The main objective of this document is to:

> Identify and understand how local and global Catalan food supply chains are perceived and represented within the public, scientific, policy and market spheres, and define the attributes to compare the performance of those supply chains from different perspectives.

To enable the realization of such an objective, four specific objectives are defined:

a) Identify the main issues regarding the performance of local and global food chains emerging from the literature produced coming from different spheres;.
b) Capture actors' perceptions with regards to food supply chain performance;
c) Identify and characterize the different discourses emerging from the literature and produced within the different spheres;
d) Define the different attributes used to perceive and represent the performance of food supply chains, and classify these major issues according to the economic, environmental, social, health and ethical dimensions;
e) Translate the performance attributes into a multidimensional set of performance indicators to further evaluation of the performance of food supply chains.

Those objectives will be realized through an analysis of the existing literature coming from the scientific community, the politicians, non-governmental organizations, the society and others, all related to Catalan local and global food supply chains. It appears essential to always keep in mind a holistic vision on the food system, mainly due to the fact that the thesis is based on perceptions and interpretations of actors involved in this system. By looking over the most recent documents, blogs, social movements, reports and more, issues will be reveal to further being translate and analyze into attributes for deeper understanding.

By fulfilling those objectives, the master thesis will dress a portrait of the actual situation respecting to food supply chain in Catalonia. Beyond all actors participating to this complex system, tendencies and

changes seem easily remarkable beyond consumers, producers and even the distribution branches as new movements are emerging and people came more and more conscious of the importance of the theme. To assure a common understanding of the concepts use all long during this work, next chapter 3 is defining and framing the most theoretical notions that can be referred to.

3. Frame of References

This chapter is aimed at setting the basis to carry out the research. Here, the main concepts and definitions are outlined in order to have a clear framework for the analysis. As derives from the objectives of the research, the main outcome of this work will be a set of attributes, and their corresponding indicators, to compare the performance of local and global Catalan food supply chains from different perspectives. Therefore, this chapter starts by reviewing the general discussions around local and global food supply chains to better define criteria to classify them, taking in account all different perspectives. In this regard, it is possible to say that those perspectives are considered as the major ones argued and defended within the society, which ones are irreducible to each other due to "the absence of a common unit of measurement across plural values" (Martinez-Alier & al., 1998). In order to identify different perspectives around food chain supply system, concepts of discourses and spheres are described in sections 3.2 and 3.4. The former is the expression of different world framings and the last is the arena in which discourses are formed.

3.1 Food supply chain models classification

Production of food is largely influenced by numbers of different tends of thought; from the local surroundings including the socio-cultural context, up to the national and international politico-economic scene, without forgetting the environmental concerns. The importance given to food products is for the majority reduces to a simple commodity, where food product is exchanged such like any one (European Commission, 2009). However, people's relations regarding food varies depending on their role in the society (as a consumer, as a civil citizen, etc.), their opinions and values, their health, their perspectives regarding the importance of the act of eating, and much more. During the last decade, food supply chains have been witnessed to an increasing conceptualization. To better represent and understand all the existing differences between models of consumption, production and distribution, one can roughly classify them into two wide categories: the Global food supply chain (GFSC) and the Local food supply chain (LFSC). Those appellations remind general idea of various concepts and definitions that are nowadays much debated beyond the population, governments and scientific.

Global food supply chain refers mostly to the dominant model of food supply in the actual globalized world. It underlines the presence of the big and organized distribution, where national but as well large quantity of international products is transiting between countries. GFSC is most of the time linked with the idea of long distribution chain, where corporations attempt to minimize their cost of production, reach as more consumers as possible and offering the lower prices to customers. Fierce competition at different level (farms, companies, firms, national and international scenes) is strongly present in all stages from the farm to the consumers.

In another hand, local food supply chain refers to concepts of short-circuits, agriculture of proximity,

localized agriculture and alternative model of production and consumption. All those concepts attempt to develop more direct links between consumers and producers. Short-circuit is defined by the presence of no more than one intermediary between final consumer and the producer, while the agriculture of proximity is more linked with the notion of distance, in terms of kilometers (Martin S., 2011). All those concepts and definitions invoke finally a large numbers of alternative models of commercialization, all characterize by the reconciliation between producers and consumers. In the following, definitions and limitations of the two different food chain models -global and local- will be discussed, bringing out the main points that characterize them.

3.1.1 Global food supply chain

Global food supply chain refers to a complex network of agents implicated in activities related to production of goods and creation of value; using goods and services or resources from outside of the country (Douglas C.L., 2003). A global supply chain is defined by various interrelated organizations, the resources used coming from diverse places all around the world and finally the mechanized and often, industrialized processes involved for the creation of the final product: production, transport, transformation and processing, logistic management, distribution, marketing and sale. It is argued that in a global food supply chain, all agents are motivated by an economic performance (maximization of profit/ minimization of cost) and by the market competitiveness (market shares) (Amate J.I. & González de Molina M.G., 2013). Global chains act on large markets, both national and international, leaded by the goal of reaching as more consumers as possible. Consumers on the other side, look for the satisfaction of their needs mostly influenced by their preferences, the availability and variety of products, the prices and the quality of aliments (Toribio J.J. & al., 2012).

In the past few decades, European food supply chains have been submitted to deep structural modifications; particularly remarkable by an intense globalization of food systems as a response to the powerful competitiveness the firms that are engaging in. Factors such as foreign investments related to agricultural production and changes in trade game relationships obliged the readjustment of the few leading firms (Geneva 2007). In continuation, the market power adjustment from manufacturing process to retailing, the more incentive requirements for food quality and safety and the application of severe environmental norms are factors of change affecting directly food chains (Swinnen J.F.M, 2007).

3.1.1.1 Specific characteristics of Global food supply chain

First of all, actual global food chains seem characterized by a strong stretch linkage between actors, starting from the producer up through the consumer. The development of most of modern firms in vertical

coordination[2] seems a necessary procedure to assure their competitiveness and efficiency on global markets. Nevertheless, a European Commission report on competitiveness reminded that food chains appear however generally fragmented due to the diversity of nature of products, which specificity has important impacts on transformation, distribution and marketing steps. Firms' concentration phenomenon of global chain seems nowadays accepted as a fact of art. The few stakeholders participating in the long chain have a very strong negotiation power against smaller, regional or familiar business models. The competition exerted by large firms impacts necessarily the overall system that is then submitted to such a pressure that farmers are not able to compete against it (Toribio J.J. & al., 2012). The seeking for economies of scale, for reduced cost of transaction or for gain of efficiency are, among others, elements that encourage the phenomenon of concentration of firms that can lead to certain disequilibrium between larger and smaller enterprises of global and local markets (Ferran Garcia-VSF, 2013). Public policies can here play a determinant role in the negotiation power re-equilibration (European Commission 2009).

In a second part, the efforts made from the part of the retailers to increase their position within the food chain are nowadays well recognized beyond the market: they are considered as the one that detain most of the control (European Commission 2009). With the actual market conditions that consider that products have to be sale before their production, negotiation power tends then to move toward the final actors of the food chain, that it to say, the retailers (Salcedo B. L. & al., 2012). Finally, in response to the accepted reality that food chains are demand-lead, retailers have made a special effort to better understand and satisfy consumer's behavior and preferences by bringing up the information to suppliers and distributors (Geneva 2007). Those data are essential for the success of a firm that has to compete on the quality-price relations.

Thirdly, there are actually two levels of competitiveness in the distribution channel, referring firstly to large retailers and secondly to major manufacturers. Both of them are delivering a horizontal competition[3]: the retailers in terms of prices and product differentiation, while the manufacturers focus on their own brand and its image, procuring an important advantage on other manufacturers and/or retailers (Salcedo B. L. & al., 2012). Those strategies advocated by large globalized firms lead them to such a high level of negotiation power comparing others actors of the food chain, that they are enable to keep a certain control on the demand (MAPA, 2008). This control influences necessarily the final price to

[2] Vertical coordination refers to the process of assuring that each successive step of the production, processing, and marketing of a product is adequately managed and interrelated to the next. Decisions about production, cost, procedure, etc. are then communicated the most efficiently as possible, from the consumer to the producer. From the economic point of view, it is argued that vertical coordination is the better way to organize a complex system as it permits to minimize transaction costs and have an ample control through the entire process (Web Reference, 2013).

[3] Horizontal competition engages firms in a competition at the same stage while vertical competition corresponds to firms competing in different stages. For instance, in the context of food supply chain, horizontal competition refers to agents that offer a franchise or a franchised product at the same price, while the vertical competition offers the same product at different prices (Steiner R.L., 2008)

consumers, which differs significantly from its original cost (Ferran Garcia-VSF, 2013). Each step from the farm production to the properly consumption of the product is creator of a certain value that is partly transmitted to the purchase price. According to the *Royal Spanish Academy*, the economic interpretation of the term "distribution" refers precisely to the assignation of product value between its different factors of production (Salcedo B. L. & al., 2012). Therefore, the recognition of value creation during each stage of a product fabrication, in addition to the fierce competition delivered by the firms easily underline the importance of efficiency, profitability, benefits and distribution of profits. However, this last seems often described as unfair and non-representative, consequences engendered by the competition itself (Ferran Garcia-VSF, 2013).

Finally, negotiation power appears the main determinant factor for price transmission and creation of benefits. The International Labour Organization mentioned in its report: « The benefits that accrue to members of a global supply chain are highly skewed in favour of the lead firm in the chain» (Geneva 2007). Among for this reason, various market positioning strategies are adopted as an attempt to re-equilibrate the power among the actors: farmer's cooperatives and associations, cooperatives of transformation, local level distributors, direct sale establishments, etc. as it will treated further on for the case of Catalonia.

In summary, the definition of a global food supply chain is based on tight and complex interactions of various actors (retailers, manufacturers, distributors, suppliers), all motivated by the creation of food product value in respect to the objective of cost minimization and profit maximization. The particular context of concentration of firms oblige them to compete on a global scene, where positioning statement seems essential to assure them a strong negotiation power that could permit them to reach a higher control of the food system, particularly concerning consumers' demand.

3.1.2 Local food supply chains

The concept of alternative food network first officially appeared in 1996, as a proposed solution to the problematic of environmental perturbations and to the crisis in rural areas (Muchnik J. 2006). This concept involved all differentiated producers, consumers or other actors of the food chain that put in actions alternatives against the dominant model of supply chain (Murdoch & al., 2000). Even more, it is said that alternative food networks are based on a "socially constructed food quality criteria", coming from the emergence of new niche of consumers, looking for higher quality-food products (Marsden T.K., 1998). Alternative networks can refer to three dimensions of the food management (Murdoch & al., 2000):

i) Alternatives in the production, such as organic farming, traditional seed varieties, sustainable practices, integrated agriculture.
ii) Alternatives in the distribution such as direct selling, local markets, sales on Internet
iii) Alternatives in the marketing such as agro-tourism, festivals, rustic restaurant.

In addition, local food supply chain makes reference to the idea of "localized agro-alimentary system" (SIAL). The idea of SIAL is referring to organizations of goods and services that are characterized by their common goals and their interdependence's relationships on a specific territory (Di Masso Tarditti 2012). Agro-alimentary small enterprises, regional associations of farmers, network of restaurants or regional distribution, are all examples of organizations that defined and constructed this local system named SIAL. In reality, it does focus more on people's point of view, on relationships between actors involved and their shared vision of the desired system. Considered as an orientation tool for innovation, the first researchers on the topic have argued that the development of SIAL permits to increase products added-value, to ameliorate the familiar net income, to generate various regional employments and to improve food security (Muchnik J. 2006). Localized food systems are nowadays commonly related to the idea of embeddedness, which captures the dynamics of re-placing aliments in their natural and social context, with the aim of encouraging collaboration and interrelations at the local scale (Murdoch & al. 2000). Then, localized agro-alimentary systems have as basic objectives the reconnection between the production and consumption phases, the redefinition of social values (protection of environment, encourage local economy, etc.) and the redistribution of added value (Di Masso Tarditti 2012).

Also, three main types of local food supply chains have been identified in the literature. The first one is the face-to-face strategy where authentic relationships between the producer and the consumers can be developed. The direct selling (in person or by internet) facilitates the communication and trust among the parties. The second strategy is the spacial proximity, referring to the recognition of certain specific products belonging to a certain region. Consumer' awareness about the origin of those products and their local production encourage them to buy more local food. Finally, the third strategy, named spatially extended, refers to the transmission of information about the traceability of the product, its conditions of production, specificities of the region, etc. for consumers located outside of the territory (Marsden T.K. & al., 2000a).

Finally, such as the idea transmitted by the meaning of "local food supply chain"; localized agro-alimentary systems enclosed as well the different ideas carry out by the references such as agriculture of proximity, local production and short-circuits. Nevertheless the differences that separate them in an organizational point of view, the essential values and beliefs appear correctly represented.

In summary, a food supply chain is defined as Local when reconciliation is remarkable between the producers and the final consumers. Local food system brings the idea that those two actors situated in the extreme the food chain can exchange ideas, knowledge and experiences in a way that it stimulates positively both sides in their research need's satisfaction. Local food chain underlines the importance of the environment, encourages local economy and encourages consumers to get aware of the quality of life of producers.

3.1.3 Differentiate Local and Global food supply chains

Lot of people in civil society is confused about the concept of local food network because they automatically associated it with quality, ecological practices or sustainable agriculture. In fact, boarders between what is considered local and global are constantly changing and it does happen that alternative network turn into conventional patterns. The apparition of organic and/or fair trade products in the conventional network of distribution are examples of the prevalent awareness of consumers for sustainable practices, even if the overall practices are not necessarily agro-ecological, taking in account the food miles factor for instance. The need of differentiation responds to requirements from the part of new market niches of consumers (Di Masso Tarditti 2012).

However, the most fundamental characteristic that differentiates global food supply chain from the local one is the sense of belongings of the product, referring to its origin, its cultural value, and the transmission of information from the producer to the consumer. The changing relation producer-consumer allows them to make new and closer connections, and to value the food product beyond the idea of a commodity, but as a differentiated quality product associated with a sense of natural, of local and of environmentally respectful (Marsden T. K. & al., 2000a).

In the next section, four guidance criteria from the literature will be presented, as they appear relevant to facilitate the identification and classification of local and global food supply chains.

3.1.3.1 Criteria to classify food supply chains

As underlined in Goodman's paper (2003), the overall European point of view concerning alternative networks is focusing on the endogenous perspective of locality; enclosing the know-how of people that are sharing the same model of coordination as well as territorial institutions and services. Also, as mentioned in the previous sections, the differentiation between global and local food supply chain is usually made according to their structural organization, the distance traveled by food products and the relations between actors.

Considering the different issues involved in the classification of a food supply chain, the GLAMUR project has defined the following four criteria to differentiate local and global food supply chains: geography, technology, organization, culture and territory.

1- **Geography**
   This criterion is mainly linked to the distance traveled by food products from the farm to the consumer, concept commonly known as food miles (DARP, 2006). The food miles framework establishes a threshold of a certain numbers of miles in the travel distance, to consider a product as local or global. This threshold may vary according to the context in which it is applied;

different people belonging to different contexts would have distinguished understanding of local or global production. For instance, the Swedish partner of the GLAMUR project consider that food products, like cheese, that travel more than 50 kilometers are considered as global.

In the present case study, as the decree 24/2013 launched by Catalan government about local production does not mention any traveled distance of food products or determined geographical areas, it can be assumed then that local food supply chains are those within the Catalonian territory.

2- **Technology**

The diversity of technology used during the stage of production, transport, transformation, process, storage and distribution phases is strongly dependent on the nature of the product. The way it is marketed and finally sold also influence the choice of technology. Still, a general accordance within the agro-alimentary food sector remained: big industrialized and integrated agro-food enterprises are disposing of a higher level of technology than small farmers, which are generally considered as more traditional (Toribio J.J. & al. 2012). For instance, a large cereal's producer has probably a better access to capital for the purchase of storage technology and harvest machinery than a smaller farmer practicing multiple activities.

Innovation of actors represents however a special characteristic of the local food chain. Local technologies may include local seeds varieties, adapted machinery, optimized use of available resources, which are all examples of the capacity of adaptation and the creativity potential of those actors. Their innovation capacity came often as a response to the necessity of differentiate and reach new niches of consumers (Alarcón S. & Sánchez M., 2013).

Therefore, the degree of globalness of a food supply chain can be defined according to the existence of global technology in the different phases of the chain. However, in industrialized countries there is a high dependence on oil.

3- **Organization & Institution**

Local food system organization is most of the time associated with a multitude of small enterprises where the main source of labor is familiar. Exploitations are doing all productive operations, linked with culture or breeding, and some of them also incorporate transformation and processing stage on the farm such as a butchery, caterer and more.

As well, local food systems are characterized by a horizontal coordination as a strategy to get better access to markets, to increase their negotiation power against big firms, to be more resilient and better face risks. Organizations such as cooperative of producers or distributors, professional associations, cooperatives to share materials and labour, etc. are all strategies employed to enlarge the positioning statement. In fact, Muchnik J. (2006) sustained that specificity of market, standards of quality product and commercial rules are all conditioning the social organization, its

coordination and the strategies used between actors involved. Finally, Muchnik's document develops on the territorial approach, inducing a coordination based on the function occupied by each agent thereby requiring an organization that recognizes the place of everyone.

As the global food system concentrates most of the decisional power at the end of the supply chain (retailers), first actors (indeed farmers) are then strongly dependent and vulnerable dare to the flews of market, the variable cost of production and partly to the competition livered between those important firms. In contrary, local food supply chains attempt to re-equilibrate this share of power but the recognition of the role of all actors involved in the food system.

Finally, the overall organizational structure of local food supply chain limits the numbers of possible intermediaries within its definition. That is to say that local chain should not have more than one intermediary between the producer and the consumers, which characteristic differs a lot from the global food chain.

4- **Culture and Territory**

Researchers have largely exploited the notion of territory in the past two decades. Lopez & Muchnik (1997) described it as an elaborated space socially constructed, culturally set and institutionally regulated. Others described it as the sense of belongings to a territory, explaining at the same time the specificity of economic behavior and social relations among its members (cited in Muchnik J. 2006). The act of taking possession of a territory is strongly linked to the culture that evolves in it and with it. People transform the space and the ambient in reference to their common shared values and expressions as a society. Identity references and cultural symbolism are at the base of that feeling of territoriality and belongings, where relationships people - people, people - nature and people – symbols are taking sense.

Another relevant aspect of the omnipresence of culture in the agro-alimentary network is the relatively recent development of multi-activities on the farm, especially associated with tourism. Gastronomic festivities, rustic restaurant, open-days on the farm, solicitation for help during the harvest period, etc. are good examples of cultural expressions as well as developing the sense of belongings to a territory.

The culture and territory criterion also link the food product to its geographical land and conditions of production (Sánchez Hernández J.L. 2009). Consumers are more and more expecting to know where the product is coming from and in which conditions it has been cultivated and prepared. The traceability of aliments is today prerequisite information to satisfy consumer demands. Certifications can also be associated with this notion of territoriality such as protected geographical indication.

Therefore, local products consider the regional and cultural know-how of people (*savoir-faire)* and their traditional knowledge. It also considers the use of the territorial aspects such as the use of local resources or the influence of particular productive methods developed within the

territory. In fact, the strong implication of the social dimension into the local food chain is sustained by the *Generalitat de Catalunya*, which recognized explicitly the importance of farmer's knowledge in its definition and the significant role that traditional knowledge has to play within the food chain (GenCat, 2013b).

The explanation of those guidance criteria, in addition to the previous description about the existing differences between a local and a global food supply chain, shed a light on the complexity of the issue at stake. The numbers of different actors interfering in those systems are all bringing their different perceptions, visions, values and more, that all have to be taken in account. Those definitions are the basic framework that will be used through the entire document to distinguish the local food chain than the global one. As the objective is to interpret the food chain actors' perceptions of performance of both dominant and alternative food network, it seemed essential to elaborate a good base of reference.

The following table presents a resume of the criteria mentioned above and the aspects to be considered when defining a food supply chain as local or global.

Table 1. Comparison Local & Global food supply

Criteria	Local	Global
Geography	Numbers of Kms	Numbers of Kms
Technology	Use local seed varieties, low energy input, adaptation of the machinery, etc.	Hybrid seed varieties, synthetized fertilizers, high energy input, concentration of packaging process, etc.
Institutional	No more than one intermediary within the phases of the food supply chain	More than one intermediary within the phases of the food supply chain
Culture and Territory	Use of traditional knowledge, use of local resources, multi-activities on the farm, etc.	Agricultural lands are for production, dependency of external inputs, etc.

3.2 Theory of discourses

Discourse approach is fruit of the socially construct analysis, that is to say that it is built by social representations and categorization of the world. This categorization can be submitted to factors of change and also to the establishment of new relations among persons, which define the socially accepted truth that leads to divergent actions in a society (Jogensen M. & Phillips L., 2002). The social construction comes from the interactions people-people and people-environment, which contribute to consider the entire system as something more than the sum of its parts, from a holistic point of view (Cicarini Jr., 2007). The approach can be also applied to the case of local and global food supply chain performance comparison by analyzing them as an entire and complex scheme, taking in account all the different points of view and perspectives that designed them. Such evaluation is directly linked and influenced by criteria previously defined to frame it. For this reason, semantic seems important to precise characteristic of treated discourses.

The methodology used for this study is based on the identification and qualitative definition of discourses. According to Foucault, the term “discourses” is defined as a set of statements that designed objects, concepts, subjects and strategies, all reliable to a same system of thoughts (Motion J. & Leitch S., 2007). Discourse construction is based on three complementary functions: the "ideational", the "relational" and the "identity". The "ideational" reveals people’s way of thinking about belongings; the "relational" refers to power relationships between actors or stakeholders, inducing their role and place in the discourse hierarchy; and finally, the "identity" is linked to the creation or transformation of actor’s subject positions within the discourse (Motion J. & Leitch S., 2007). To better illustrate those functions, here is an example:

> *A small sheep producer decided to add a transformation activity on the farm. His first objective is to increase the value added to its products, with the expectation to increase his income and also to get a better access to the market. Then, his perception and position within the food system will change, as other opportunities will be available (kiosk of the farm, agro-tourism, sales to markets/restaurants, etc.).*

In fact, discourse functions analysis depends and varies upon the perspectives they are realized (from a scientific, social or political point of view for instance).

All discourses induced a share of ideas, values and principles that are enhancing the creation of knowledge which subsequently evolve under different perspectives. Discourses frame knowledge that are creating mental models, embedded boundaries and creating role positions among the actors. Then, in accordance to the social point of view, they are ordering worldviews and explaining phenomenon.

Discourses are expressed by means of narratives, which are the results of an interpretation giving meaning to a sequence of perceived events, assigning causality between those events. Therefore, actors choose a given narrative to organize information about their perceptions of external events and those perceptions can be shared between various members of the society. This shared narrative became consequently the common sense of everyone (Rivera-Ferre, 2012). From this perspective, discourse can serve to the promotion and maintenance of a certain knowledge- power relation, influenced by the role and the position a person represents within the discourse (Clegg & al., 2006). This argument is easily remarkable to the actual important influence of the scientific community on the politic sphere. Finally, Foucault mentioned that the subjectivity is an essential characteristic for the adoption of a discourse by a society, as it strengthens relations of power. Roles of actors in the discourse see themselves reinforced by the subjectivity of others when the discourse became more and more the accepted common sense (Gramsci, 1971, cited in Motion J. & Leitch S., 2007).

Finally, framing narratives or argumentations into distinctive discourses seems necessary to realize the performance assessment on global and local food supply chains. Through a discourse, enclosing a set of arguments, the causal relations of facts and ideas will be recognizable, which then enable to compare local models to global ones.

3.2.1 Food supply chain discourses

Discourses on agro-food system determine its role within the social, economic and political environments, themselves influenced by science, production of knowledge, social movements and more. According to Rivera-Ferre (2012) there are basically two opposite ways of thinking regarding food system: the essentially economic narrative and the human right narrative. Other authors proposed an even simplest way to analyze agro-food narratives, by divided them into alternative and official frames (Leach & al., 2010). The official narrative is strongly linked to the economic narrative, based on the idea of an industrial agriculture where development passes by economic growth. This narrative aimed to maximize profits, minimize environmental negative externalities with new technological packages and increase social welfare. This last is seen as a consequence of the economic growth. Policies are mostly market-centered, justifying the support from private corporations, multilateral institutions and most of governments (Rivera-Ferre, 2012). In contrary, the alternative narrative refers more to human rights, agro-ecology, sustainability of livelihood, system's resilience, local economy and others. The recognition of the role of peasants in a sustainable environment and the importance of traditional knowledge are core elements of this discourse. It is promoting a healthy, nutritive and culturally adapted food for people in a democratize system, where equity and environmental responsibility are prioritized (Rivera-Ferre, 2012).

According to the current knowledge about food supply chains within the Autonomous University of Barcelona (UAB) team of the GLAMUR project, four main discourses about food systems have been defined. These discourses are a simplification of a complex reality and will be use to guide the analysis and to dress a picture of the Catalan agro-food system. In fact, it may happen that other complementary narratives emerge from the literature, which do not strictly bounded the discourses into the next exposed frame.

1- **Commodity discourse**

This discourse considers food as any other common good. It is essentially an economic point of view, where factors of production have to be maximized just like the profit. It is about productivity, optimization of resources, market regulation, efficiency, market liberalization, competitive advantage and neo-capitalism. Commodity discourse's central ideas are linked with the exchange of goods (importation and exportation of food), of competitive advantage and positioning statement in a world perspective.

2- **Livelihood discourse**

It is about a more complex and integrated vision of the food system, in line with the analysis of rural systems, where agricultural activities frame the metabolism of the society, the lifestyle, the land use, the flows of resources, etc. without forgetting the interaction with the politico-economic scene. Functions of food are diverse and respond then to numbers of different needs. Food can represent people's health, lifestyle for a farmer, income for a cooperative, expression of traditions, agro-ecological development, food sovereignty for a territory and much more. Livelihood finally refers to the living environment of farmers within a society, including its right to have access to a decent life.

3- **Discourse on Rights**

Discourse on right first recognizes the existence of a society, the right to work, to health, to decide, to food safety, to culturally express themselves and more. Food security seems then part of the right discourse, as it is a basic right to have access to a decent food, corresponding to the cultural needs and preferences. Also, this discourse assumes that the cost of implementing and enforcing rights are affordable "by definition". Finally, notions of democratization and participation during decisional process seem central to get everyone's ideas and consider all points of view.

4- **Deep ecology discourse**

Deep ecology philosophy underlines the holistic perception, reminding the importance of human-food relations, its symbolism and sacristy. This is the environmentalism discourse where agriculture is seen as something more than its primary function of producing food, such like the livelihood discourse. The importance of relation human-nature seems central in this discourse, as it permits the expression of a culture and its inner approach towards food. The planet Earth occupies the center place in concordance with nature and is often referred as Gaïa, Mother-Earth or Pachamama. Finally, deep- ecology discourse claims for a free GMOs agriculture and a deeply respect for life.

The literature review will identify the main perceived issues in relation to food supply chains. Afterward, these issues are grouped in order to construct the narratives of the different discourses. From these narratives, it will be then possible to identify the attributes used by different discourse regarding the performance of food supply chains. The next section presents the different set of actors that are telling those discourses and relating the issues about food systems.

3.3 Spheres of interactions and dimensions

Discourses are defended, in a first plan, by actors directly involve in the food chain and, in a second plan, by interactions of those actors. Those sets of actors make reference to the notion of spheres, which take reference from a space of communication embodied by actors (Brunori G. & al., 2013).

In this work, the notion of "spheres" is used to better represent the arena in which different actors express their distinctive interests: there are the public sphere, the market sphere, the policy sphere and finally, the scientific sphere. All those spheres have a prerequisite mental model or frame about the food supply chain, and it is by their identification in the literature that it would be possible to joint those actors with their main discourse. In addition, there are five dimensions to take in account, through which all spheres have continually interactions. There are the economic, social, ethical, health and environmental dimensions. In the following, each sphere will be explained and linked with those dimensions.

3.3.1 Public sphere

Public sphere refers mainly to perceptions of consumers and producers, food awareness, environmental concerns, worldviews and values, all influenced by people's lifestyles, culture and traditions. According to Habernas & al. (1989) and Fraser (1990), public sphere is a place where people can express, discuss and exchange ideas on the common public goods. Sharing ideas, worldviews and points of view can easily lead to diverse controversies and opposite positions between people (Brunori G. & al., 2013). The emergence of social food movements such as Slow Food movement, farm-animal welfare, safe food, community food security movement, etc., are all examples of this disparity within the society (Nestle M., 2009).

It seems also important to relate that the public sphere, also called civil society sphere, appears nowadays mainly dominated by the mass media, which kind of limits people's perspectives by exposing over and over again a standard public opinion. The mass media have for sure big impacts on a society but it is as well a tool used by the others spheres to better understand or interpret consumers' needs and preferences. Through this easily accessible information, a frame of references is shared between the spheres, however their differences in terms of interests (Brunori G. & al., 2013).

In resume, it is possible to say that public sphere included three types of main actors that are the consumers, the producers and the rest of the society, named civil society. A same actor may act in different spheres according to the area in which the argumentation takes place. Depending on the position each person has within a specific situation (once a person is a consumer, once this same person is a simple citizen), perceptions, opinions and real decisional actions can differ and change among time, context and a series of other external and internal variables such as food prices, food access, familiar situation, job, etc.

3.3.2 Market sphere

Market sphere includes all agents of the food chain that take actions in diverse market activities, where the main conception of food can be identified as commodity. From an economic point of view, major actors of market sphere aims to maximize profit and minimize cost, while from a social point of view, it attempts to satisfy consumers' preferences and needs. Either the differentiation of their interests and goals, market sphere always looks for connections with the society (the public sphere), as the expression of people's needs and matters is the basic source of growth for the market sphere (Brunori G. & al., 2013). In fact, the integration capacities of the actors performing in the market sphere, as well as its strong adaptability, define the most competitive sectors.

As market sphere is mostly rhetoric of the public sector, it has to adapt to social demands. Since few decades, issues such as the environment, water quality, food safety and health have been increasingly included in debates within the market sphere. Social exigencies are more and more severe regarding negative environmental externalities and food safety; actors in the market sphere have then make intense adjustments in this sense since the last decades (Toribio J. J., 2012). As well, there is a large tendency to differentiate and looking for new niches of consumers that have different requirements.

3.3.3 Policy sphere

It refers to the governance of food supply chains and to the importance of the role of public policies within the overall agro-food system. According to Barling D. (2007), governance is nowadays clearly shared between the private and the public domains, within a multi-level core. The private sector establishes more and more the standards in terms of product quality, food process and food safety, impacting directly on consumption diets (social dimension) and on people's health (health dimension) (Marsden T. & al., 2000b). The increase of the leadership exercised by the private sector is mainly a consequence of this new strong relationship retailer-supplier, as retailers are now considered as demand-led. The creation of Global-GAP by 13 European retailers claiming for agricultural good practices is a good example of the increasing power of those new buyers (Lang T. & al., 2009).

A study from the UK suggests that governments see reduced their scope of actions concerning social education (consumption patterns, health diseases, etc.) restricted to the second and/or final phase of transformation, but rarely on the primary production itself (agriculture and livestock). Private corporations seem the most dominant in standards specifications (quality and safety), while public sphere assumes the lead regarding fair trade and ethical production (ethic dimension) (Barling D., 2007). In reality, competitive strategies on international marketplaces, can lead to a change in what farmers are interested to cultivate and produce. Nonetheless, governments still have an impact on the primary production though the regulation of environmental norms, but also through payments for the producers, subsidies and more.

Finally, the politic sphere includes all governmental big tendencies that influence the food supply chain and its actors. Most of the time, government's acts are done by imposition of laws, norms and regulations, but it can also be done through strategic programs, promotion of local and national economy, increasing life quality of citizens, through encouraging public health, etc. For instance, the recognition of the concept of the multi-functionality of agriculture by the Common Agricultural Policy has conducted to a series of diverse programs for farmers such as the development of agro-tourism, the maintain of landscape, the conviviality with neighbors, etc., where the environmental, economic, social and ethical dimensions are included (Barling D., 2009).

3.3.4 Scientific sphere

The role of scientific and academics in the food supply chain seems more and more important as many defend the point that most of answers concerning food security and food quality will be found through scientific solutions. As governments, corporations and firms are looking for higher productivity of land, higher efficiency, better resilience of ecosystems, etc., science has every day a more significant role to play (Hart R., 2012).

In all dimensions – economic, environmental, social, ethic and health - scientific sphere is present: institutes of research and development, universities and laboratories, firms and companies, NGOs (Via Campesina for instance), etc. are all working in relation to, at least, one aspect or issue of the food chain. Examples are various: researches on aliments' properties, on anti-oxidants, on value added quality product; on green sources of energy and technologies; on varieties of high productivity, on varieties resistant to drought, insects and more; but also investigation destined to improve lifestyles of people, familiar income, conservation of natural resources and biodiversity, re-introduction of ancestral varieties and much more.

In addition, it seems important to underline the fact that scientific sphere reports realities, truths and living experiences from the society in general. When academics analyze results of studies coming from facts of art, they have a certain degree of responsibility, as they are the one who decide the facts they want to report in their paper. Scientific community's role is therefore oriented through a decisional function, explained by the statement that they are determining the importance of what they want to say. In the same line of thoughts, it is also important to take in account that scientific community influence lots of decisions taken by politicians but also, by civil citizens, professional and more. For instance, the discovery of the importance of Omega-3 oil for the brain can influence consumers to buy products rich in this value added.

Finally, those definitions will serve as a basis to categorize documents of the literature review in reference to their sphere of belongings, but also for the identification of the dimensions that are treated within the texts.

3.4 Food supply chain performance

3.4.1 Theory of performance

The assessment of food supply chain performance is basically centred on the efficiency and effectiveness of each stage from the producer's farm up through consumer's homes. Definitions and mentions related to food chain performance differ significantly depending on what the authors are referring to. For Chopra and Meindl (2001), food chain performance is based on the profitability of the overall system; in opposition, for Coelli & al. (2005), it is based on the production ratio of the food chain; for Van der Vorst (2000), it relies on consumers and users' requirements satisfaction, without emphasis on the total cost. These are only few examples to better visualize how food supply chain can be understood and assessed. Also, it underlines its intrinsic characteristic of multi-dimensionality: different actors with distinctive interests, reflecting the firm perspective or the food chain vision (Lambert & Polhen, 2001). In addition, the lack of shared information between actors does not permit to anticipate the possible impacts or consequences one can have on another, which can lead to an effect of counter-productivity within the food system. When it is time to assess food chain performance, it seems then primordial to take in account its multi-dimensional perspectives or the system viewed as a whole and not as the sum of its parts (Zhu, 2003).

Moreover, as agricultural economy is a different discipline than the pure economy itself, the assessment of food supply chain performance also differs from others supply chain evaluations. Characteristics related on the nature of the production (e.g. high dependency on external uncontrollable factors -climate, soils, water availability, etc.), the nature of the product (e.g. perishability, seasonality) and finally the social attitudes and requirements cope to food safety, food security, protection of environment, animal welfare, etc., enlarge even more the perspective that should have a food chain assessment (Aramyan L.H., 2007).

To realize such an analysis of perceptions of food chain performance, the social, economic and environmental aspects are taken in account, to cover entirely the different perceptions of performance of the different actors of the food chain models. Those three aspects of performance will therefore be examined.

3.2.1.1 Social performance of food supply chains

Social performance can be define as the effective implementation of a certain social mission given by an institution, by a group of people or by a system, where numbers of actors are interacting together, such like it is the case in the food system. The notion of social mission induces common shared values as an essential criteria as well as inclosing a kind of general responsibility for actors and agents that are part of it (RSEpro, 2012). The main objective of social performance is to compare the results and the resources

used to get to those results; that is to say, to recognize the creation of value (Echos Business, 2011). Social performance, as well as environmental evaluation, seems quite a new field of study as it is only considered since few years with the increase of the concern related to sustainable development. In addition, most of literature related to social performance treats of the topic at the enterprise level and not at the system such as it is the case in the present study. Nonetheless, it appears possible to adapt the indicators mentioned in the literature to this case study. The next lists presents examples of social attributes used by different authors to assess the performance of a food chain. As mentioned, most of them have been adapted to the actual context.

(Abidar R., 2009)

a) Types and nature of relations within the food chain (power relations between actors of the food chain like small farmers against large firms, political program for farmers, etc.);
b) Social changes (aging population, exodus of young from rural areas, price sensitivity of consumers, etc.);
c) Level of satisfaction from the part of the consumers;
d) Innovation in terms of capacity of adaptation from the part of the farmers;
e) Fair distribution of profit among the food chain;

(Lapenu C. & al., 2009)

a) The increase of the general concern about food security influences the management of the food chain as the public (consumers and producers), the politic and the market spheres are implicated;
b) Quality of life of producers and quality of services (storage, transport, maintenance, etc.);
c) Consumers' satisfaction is as well mentioned, as the production appears strongly dependent on market requirements;
d) Accessible education, formation and workshops for producers and consumers;
e) Empowerment of the local, what is to say enlarge possibilities in rural regions to create a more dynamic local economy;
f) Development of stronger relationships producers-consumers;
g) Participation; Sense of ethic and responsibility;

3.2.1.2 Economic performance of food supply chains

Economic performance of food supply chains is definitely much more documented and easy to evaluate than the social one. There are various indicators used by all the agents that can differ depending on the focus and interests the entity has for the economic dimension. For instance, the industry can be interested in the productivity rate, the efficiency, the index of concentration of the sector and more; in another point of view, the government can be more interested to know the GDP index, the GDP per capita and the employment rate among others (Euro21, 2013), while consumers are perhaps more interested by the quality variable of food product (Aramyan L.H., 2007). Economic performance is finally an assessment of the success of an organization in relation to similar other institutions, under the overall market point of view (Business Dictionary, 2013). Applied to the actual case study of food chain evaluation, performance of agro-food enterprises is mostly referring to its capacity to assure its durability through competitive markets, the maximization of market shares, etc. regarding the study leaded by Abidar R., 2009.

3.2.1.3 Environmental performance of food supply chains

The integration of environmental performance is more and more advocate from the part of large enterprises and firms, as customers and governments tend to give a greater emphasis on environmental externalities. Several norms, like ISO 14001, are references in the domain of managing environmental impacts of products elaboration (Dohou-Renaud A., 2008). Nevertheless the important development of norms and regulations regarding environment in the last few years, evaluation of environmental impacts still stay a very subjective notion that varies between institutions, societies or firms in general.

Environmental performance includes a large range of factors and scopes to take in account. For some, it refers firstly to certain recognition of a responsibility from the part of the industrial sector, but also from the entire society, brief from all actors participating in the food chain. It therefore rhymes with territorial development, as it is a central notion in the definition of a society as mentioned before. Then, environmental performance corresponds to the global performance of the surroundings, of the general conditions where evolve a society (Dumonteuil J., 2011).

More specifically, to get to know environmental impacts of a food chain, each steps of the process, from the farm to the table as to be evaluated separately; that is to say, the supplying of raw materials such as fossil fuel and agrochemicals, the agricultural and livestock production, the transformation, the distribution and sale and finally, the consumption at home (ENSMP, 2001). Literature seems abundant when it is time to evaluate environmental impact of agricultural activities and nowadays, various large firms produce themselves a report of their ecological footprint for consumers and/or authorities, as it is a growing notion valued by those. Finally, environmental issues related to food chain are numerous; starting from food miles, it also concerns environmental impacts of fertilization, agro-chemicals, use of machinery, intensification and concentration of sectorial activities, land pressure from both urban extension, etc. Through the following analysis, perspectives of environmental performance of food supply chain will then be revealed.

In the next part, methodology used to reach this main objective is explained.

4. Methodology

4.1 GLAMUR project literature review

As the main purpose of this work is to capture people's perceptions of local and global food supply chain performance and the attributes prioritized by them to represent and evaluate food chain performance, as well as the main defended argumentation one actor has on the food chain, the research of literature has to cover as much as possible all aspects of the different encountered models of food chain in the territory of Catalonia. As mentioned before, there are numbers of socio-economic and cultural differences between Spanish regions and to avoid a generalization of perceptions, the present analysis will focus on the case study of Catalonia. This particularity would have important consequences in the operationalization of the criteria to classify food systems. For instance, agriculture department is an Autonomous Community jurisdiction, even if there is also a general ministry of Agriculture in Spain. Generalitat de Catalunuya (GenCat) is then more present and aware of the central characteristics and challenges leading agricultural activities in the region, as well as its distinctive cultural practices.

To realize this first step, the GLAMUR project has elaborated a framework to assure the conformity beyond each participative country in the project. To do so, it is expected that all aspects related to the food chain emerge from the literature review. That is to say, information could comes from TV programs, magazines, blogs, public informative guides, newspapers, NGOs, governments, journals, books, market reports, trade networks, international documents, etc. As the number of references appears as almost unlimited, a guideline was elaborated by the GLAMUR project to fulfill certain criteria. Literature review was composed of 10 to 30 academic papers, 15 to 20 market reports, 10 to 20 policy related documents, 100 newspaper articles and between 5 to 10 blogs or TV programs, all from the year 2008 up to now (GLAMUR, 2013b).

4.2 Literature review classification

In order to organize such quantity of information, a system of categorization has been elaborated in accordance to respond to three levels of classification that are the spheres of belongings, the major discourses and finally the dimensions mentioned into those discourses:

i) The first level of classification aims to distinguish the different people's roles present in the dominant and alternative food chain. Data sources of the literature review have been sought to cover all actors or groups of actors linked and interacting within the food chain, that are therefore referred as spheres. As mentioned before, there are four types of spheres of belongings.

ii) The second categorization is linked to the main idea disclosed within the document of the literature review. It refers to the general argumentation given by actors of the food chain, with their vision of the system, their opinion, values and interpretations of the global and local food supply chain. Those argumentations or narratives, noted as discourses, have also been treated above.

iii) The third level of organization corresponds to five dimensions that have been identified by the GLAMUR project to facilitate the analysis of the performance and to assure to fully include all linked aspects. Those dimensions are: economic, social, environment, health and ethic.

This type of classification is repeated all along the document, including on the part of data analyses as it will be treated further on. The next section is justifying the selection of texts for complete analysis regarding the performance of local and global food supply chains.

4.2.1 Selection of documents for text analysis

Nonetheless the exigencies in relation to the numbers of documents required for the GLAMUR project, some documents have been chosen among the entire literature review, with the aim of being submitted to complete analysis. Documents were selected according to the following criteria:

- Papers referring on local and global food supply chain of Catalonia or Spain;
- Two documents from each spheres have been chosen with the objective of representing all points of view of the food chain;
- Since one of the software used for the text analysis is insensible to language, for this first analysis, only documents in Spanish have been selected. As well, a unique language of texts assures a common understanding of the concepts and minimizes the risk of double meaning words.

Eight documents have therefore been chose for the analysis; two papers per sphere, as it is possible to see in Appendix 1. The treatment of data is based on two different softwares: Atlas.ti and Alceste.

4.3 Tools for text analysis

4.3.1 Atlas.ti

Atlas.ti Software was used to identify issues, opinions, key words and ideas in relation to actors' perceptions and their inter-relations one against the others. Atlas.ti is an interesting tool for qualitative data analysis, as it is possible to integrate an extended body of texts. The software permits to codify words and sentences, but also images, graphs and more (Atlas.ti, 2013). Code's management enables to regroup them into families and makes links between them.

Therefore, the first step for the text analysis has consisted in codifying issues and argumentation underlined in the selected documents. This exercise consists in identifying the major issues of food systems and the problematic around them expressed from different points of view. The process consists in selecting a quote containing those issues and codifying them. As a result, a set of more than 30 different codes has emerged from the documents. Those codes have being regrouped into more general concepts, for a total of 20 codes of references. Identification of issues and food chain perceptions are quite suggestive as it depends of the reader's interpretation of the text. In order to check the validity of the interpretation of the texts, a second person has performed the analysis of the same documents. As well, a complementary programme, described in the next section, was used in order to contrast the outcomes of the qualitative analysis performed by means of Atlas.ti software.

4.3.2 Alceste

The second tool for text analysis consists in the Alceste software, which is a textual data analysis software that permits to interpret the semantic of the vocabulary of texts, the way documents are linked to each other and also, to underline subjective landmarks within those texts (CNRS, 2012). The output is composed of classes of meanings and groups of words or sentences, relating the main ideas and themes treated within the documents. In resume, it extracts discourses from the corpus of texts, emphasizing on the links between the semantic content of a discourse and the content of the speech, which can be very useful for the identification of discourses within the papers (Plumecocq G., 2013a). The software performs the identification of classes of meanings, main ideas and themes, and their relations automatically. The analysts is then in charge of analyzing and interpreting those outcomes.

For the actual purpose of the document, Alceste software would identify the main issues referring to the concepts of performance (social, economic and environmental) emerging from the different spheres. It seems important to mention that discourses' frames will come from actors' speeches, pictures and graphs in the texts, highlighted actions, etc. All those elements framing the discourse are strongly dependent of the speaker (actor of food supply chain), the circumstance the speech is done (its credibility, rigidity, ethics, marks of irony, etc.), the personality of the actor, the socio-institutional and economic context, the audience and much more. As the analysis will attempt to extract meaning of the corpus of texts, it appears primordial to adapt and justify the output with the actual situational context of the country (Plumecocq G., 2013b). Finally, a part of the eight selected texts previously mentioned, six others documents written in Spanish have been added for the Alceste analysis, to be able to have more representative results of the perceptions of performance. Details can be seen in Appendix 2. The automatization of the analysis with Alceste has permitted to include more documents without increasing the time processing.

4.4 Text analysis

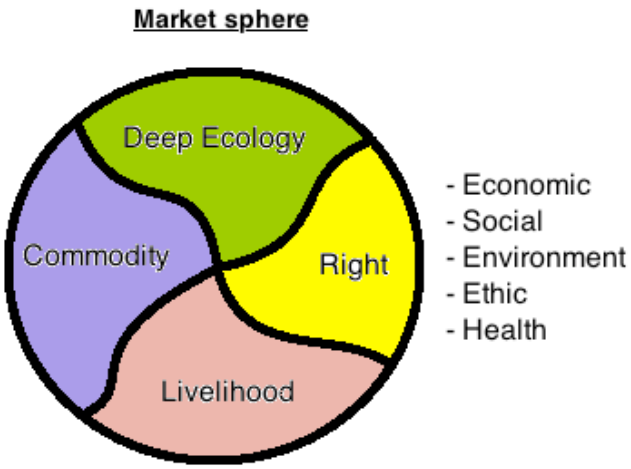
4.4.1 Classification of codes

According to the 19 codes identified in the selected texts with the software Atlas.ti, both quotes and its assigned code have been classified into their discourses of reference (it could be a main discourse or the combination of two discourses), the sphere it belongs to and the main dimensions related to. There are numbers of possible combinations of discourses, spheres and dimensions, reflecting pretty much the complex reality and interactions into food supply chains. For instance, the quote:

> *"Short circuits do not create such disequilibrium in the food chain such like the long chain" (MAPA, 2008),*

concerns directly the market sphere and includes both the commodity and livelihood discourses. As well, at least two dimensions can be linked to this issue: the economic dimension, the ethic one and finally the social one. Figure 1 demonstrates an example of the possible interactions between those three levels of classification.

Figure 1. Combinations Spheres-Discourse-Dimensions



Then, all citations codified within the chosen documents have been classified under those three levels. To better illustrate the features of Atlas.ti, here is an example, followed by its classification:

> In the document *Compra pública en sistemas alimentarios locales, Impactos sociales, ambientales y económicos* (Ferran Garcia-VSF, 2013), the quality of food from the general

consumers' perception is mentioned under the interpretation of the VSF- Justicia Alimentaria Global association, an organization that fights for food sovereignty.

Here is a part of the text that refers to consumers' perception:
" En este sentido, muchas personas han perdido el conocimiento y las habilidades necesarias para tomar decisiones sobre las múltiples dimensiones de la calidad, o sobre cómo una dieta equilibrada y de temporada contribuye a mejorar la salud. Los circuitos cortos ofrecen la posibilidad de gestionar estos conocimientos a través de la acción colectiva".

" In this sense, many people have lost the knowledge and the necessary abilities to take decisions regarding the diverse dimensions of food quality or on how a healthy and seasonal diet can contribute to improve their general health. Short-circuits offer the possibility to manage this forgotten knowledge through collective actions".

Spheres:	Public
Actors involved:	Consumers, Producers, and Association of producers
Dimensions implicated:	Social and Health
Codes identified:	Health and Product quality
Dominant narrative:	Considering that consumers do not dispose nowadays of sufficient information to make clear choice regarding their alimentation, short circuits offer an alternative in terms of quality of products and healthy food.
Alternative narrative:	Food products coming from small farmers can be less safety than the one passing through the big distribution that dispose of higher safety standards.
Discourse:	Livelihood

4.4.2 Specific analysis

Following this general analysis, it seems interesting to analyze as well each different codes revealed during the identification of issues with Atlas.ti software. In a first plan, codes have grouped into families of belongings to better catch the entirety of the perception of performance. In a second part, codes have also been explained across their different possible interpretations found in the literature. The parts 4.5.2.1 and 4.5.2.2 are given more explanations on the topic.

4.4.2.1 Grouping codes into families

With the aim of furnishing a better analysis of perceptions, codes have been grouped into families, attending as a tool to facilitate the analysis. Among the 20 found codes, six families have been extracted and groped under their common understanding and standing point regarding food chain. Families of codes are named Market, Quality, Sustainable practices, Public policies, Innovation and Territory. In reference to the example mentioned above in 4.5.1, the codes *Health* and *Quality of product* have been underlined as issues in the text that it refers to. The analysis of those two codes conducts to the fact that they are pretty linked one with another, in almost all the possible contexts. It is the reason why they are both part of the large family of codes *Quality*.

In summary, this categorization suggests that all perceptions of performance of actors of the food chain are capture through one or another of those groups of codes. Families are finally codes of second level that permit to group similar points of view and concepts.

The idea of analyzing perceptions of performance from the point of view of the families of codes enable to really catch the issues and ideas revealed by all the different spheres related to the selected texts. In this specific analysis of codes, the objective is to emerge the main judgments from the part of all spheres linked directly with the quotes. This perspective considers therefore all the different actors explicitly and implicitly cited or related to in the codified quotes, to enable a more holistic point of view of the analysis.

4.4.2.2 Definition of Attributes

In a second plan, once codes have been regrouped into families, the specific analysis leads to the necessity of define different possible interpretations of those same codes. Attribute's interpretations are based on the argumentation or narrative defended by groups of actors or spheres within the literature. In this work, we understand an attribute as an observable and relevant quality that is pertinent for the characterization of the system under analysis. An attribute could be *Cost of production*, related to the general code *Cost,* which is part of the family *Market*. Another example could be the attribute *Water pollution*, in reference to the code *Pollution* and the family of codes named *Sustainable practices*.

It is through this definition of attributes coming from the analysis of codes, that a real analysis of perceptions of performance of local and global supply chains is possible; jointly with the comparison of models one beside the others.

The next step consists then in a general analysis of the perceptions of performance, according to the spheres of belongings of each analysed documents.

4.4.3 General analysis

The present step of text analysis consists in a general exploration of all quotes underlined with Atlas.ti software. In total, 210 citations have been codified, classified and finally analysed to dress a portrait of the overall perceptions of each sphere, specifying their discourses and dimensions of belongings. Representations of each level of classification, as well as the main ideas of performance perceived have been revealed through this first investigation. All details of the quotes and their classification can be seen in Appendix 8.

4.4.4 From Attributes to Indicators

Once the attributes have been defined (qualitative valuation) and analyzed (quantitative evaluation), measurable indicators are suggested to better compare the different models of the food system. An indicator is a *variable*, which is an operational representation of an attribute of a system. In other words an indicator is an image of an attribute defined in terms of a specific measurement or observation procedure. The value (i.e. the state of the variable) gives information on the condition and/or trend of an attribute (or attributes) of the system considered (Gallopín G., 1997).

Those indicators will mainly serve for the next step of the GLAMUR project, that is to say, for the multi-criteria analysis.

4.5 Limitations of the study

Starting from the definition of the framework of the present study, concepts of spheres, food system discourses and dimensions related to those, are quite a new topic in research investigation. The literature is poor and so, some requirements for the fully understanding of the categorization of both selected texts and quotes codified within those texts relied on self-interpretation. As well, the complexities of analysing food systems as a first plan and capture the perceptions of actors in second plan induced necessarily numbers of suggestive interpretations of the meaning of all.

As mentioned earlier, the numerous definitions and concepts related to the notion of local and global food supply chains lead sometime to a certain misunderstanding from the part of all, as each actor (consumers, politicians, scientific, etc.) have their own interpretation of the terms. Once again, this fact recognizes the complexity of the food chains and the interactions of actors between them. The division and classification of issues of food chain into the spheres, discourses and dimensions limit in a certain way the interpretation of the perception of the performance. Because people dress different role in different time, their point of view can change depending precisely on this role. Also, actors have a more multifaceted vision of the food system that is not necessarily represented into the actual classification of the study.

Finally, texts' analysis is pretty suggestive as the reader as to recognize the issues in the literature and interpret them under a holistic point of view of the entire food system. Even if those various limitations can bully the reliability of the results, possibilities to minimize them exist and can be apply for the present study. The strict and precise definition of the terms and the use of complementary software analysis are, among others, potential of solution to minimize the risk of negligence.

Before starting directly with the data analysis of the literature review, it seems interesting to dress an overall portrait on the actual situation regarding first, the global food supply chain and secondly, the local food supply chain in Catalonia. To further on better understand the attributes that will correspond to the perception of performance, it is necessary to have primarily an idea of the context of the food system. The Chapter 5 presents the main lines and characteristics of the dominant and alternative Catalan food models.

5. Catalan food supply chain models

5.1 Global food supply chain

5.1.1 Overview of the politico-economic context

Like most of European countries, Catalonia is affected for the ongoing fourth year by an important economic crisis (GenCat, 2011a). Repercussions of those economic perturbations are partly reflected by a certain aversion to risk within the politico-economic scene. Structural changes in various spheres of the society have been noted; among others in the agro-food industry. In addition, dispositions have been engaged: consolidation of large distribution, concentration of actors among the food chain, enlargement of market surfaces, increment of distributor brand quotas, etc., all of them focusing on low price strategy and competitive advantage on the global scene (CNC, 2011). The two past years indicated around zero increase GDP, a reduction of economic capacity for the majority of Catalan families and an augmentation of food product prices. This latter is mainly due to an augmentation of the Spanish value added tax on purchase prices, to the increase of cost of production (fuel, raw materials, etc.) and finally to a higher demand from the emergent countries, amplifying the competition between national and international markets. Most important commercial groups have then been sensitized to the risks linked to the strong war on prices, and finally mobilized themselves to change strategies (GenCat, 2011a).

Catalan agro-food industry counts for 21% of total sales and employed 15% of all jobs in the industrial sector (Ajuntament de Barcelona 2011). Its contribution to Spain in terms of turnover is about 23%, including food, beverage and tobacco industries; placing it at the first rank in importance of all Spanish Autonomous Communities. Meat industry is far away the most important sector, as it represents around 30% of industry's sales and employs 36% of people in the agro-food industry (2008) (Ajuntament de Barcelona 2011). Catalonia undergoes an important atomization of its agro-food system, by which two types of organizational structures are noticeable: there are a small number of large companies and a large number of small enterprises. More details are given in Table 20 of the Appendix 3.

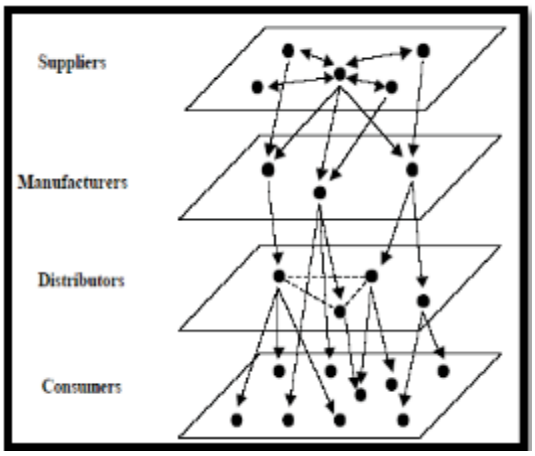
In reality, Catalan enterprises count for only 7% of all those in operation in Spain. Large companies are characterized by a greater access to market, a higher negotiation power, taking on important economy of scales and are, most of the time, located close to urban centers that permits to have a better understanding of the demand. In the other hand, small enterprises are more focusing on the primary sector (agriculture, livestock and fisheries), and sometimes on the first steps of processing activities. Then, the main

organizational pattern tendency is defined by a horizontal coordination[4] and a vertical integration[5] of enterprises (Toribio J.J. & al. 2012).

5.1.2 Portrait of commercial groups in Catalonia

The first data resulting from the sectorial study on commercial distribution in Catalonia recognize that the number of establishments and sale areas are decreasing while their surfaces are slightly expanding. In terms of volume of sales, supermarkets (from 400 to 2499 m^2) are the most frequent commercial format, behind specialized shops, hypermarkets and others self-service markets. In 2010, they were covering 34% of the total sale surfaces, totalizing about 64% of volume of sales (GenCat, 2011a). The most important commercial groups acting in Catalonia are Mercadona, Eroski and Carrefour, controlling among three 48% of total sales volume in 2010 and the half of sales volume in Spain (2011) (Expansion.com, 2011). Like most of industrialized countries, Catalan agro-industry is characterized by a concentration of its actors: the first ten distribution enterprises owned 85% of the total volume of sales (DIUE, 2010). In addition, each of those main groups has a major feature in the market: Mercadona is leader in terms of turnover; Carrefour is first in sale surface and Eroski is leader in number of establishments present in a greater sum of Catalan counties -12 of the 41. Bon Preu group is following with a presence in eight counties and then Carrefour arrives again with a rate of 6/41 (GenCat, 2011a). Table 2 gives the details on the top three agro-alimentary commercial groups in Catalonia. More details can be seen in Appendix 4.

[4] Horizontal coordination recognizes the interdependency between agents in a way to take advantage of this organization. It enables the creation of economy of scales, as well as encouraging a more efficient use of the available resources and capacities. It is also about the share of information between different entities that are all serving the same aim and practicing the same kind of activities. Horizontal coordination can be included in a multi-level hierarchy organization, like a vertical integration as it is previously mentioned (Ruben R. & al., 2006).



[5] Vertical integration refers to the organization of a firm or company that allocates the different steps of the elaboration of a product into various entities. The vertical integration permits to realize economy of scale and minimize transport of products among others (Investopedia, 2013).

Table 2. Top three positioning statements of the most important commercial groups in Catalonia (2010)

Rank	Surface		Num. of establishments		Sales Volume	
		%		%		%
1	Carrefour	16	Carrefour	12	Mercadona	18
2	Eroski	14	Condis	8	Carrefour	17
3	Mercadona	11	Eroski	7	Eroski	13

(GenCat, 2011a)

The fast and recent development of distributor's brands has also influenced a lot the competitive scene of commercial groups. In Spain, the group Eroski has been the first one to develop its own brand at the end of the 70's. Two characteristics are essentials to consider a mark as a distributor's one: 1- it has to be owned by the distributor, 2- it has to be distribute exclusively by the distributor, which differ them from the manufacturer brand. This last element seems to have evolved in the last years, as it is now possible for commercial entities to buy another distributor brand (CNC, 2011). Starting from a strategy of brand imitation, distributor brands have achieved to create their own identity, opening themselves to new niches of consumers. Besides, most of commercial groups have the majority of their activities outside of the country: the third of Catalan enterprises affirm that their main market is extern (Gil Roig J.M., 2004). This reality is reflected by the fact that Spain is one of the European countries which sees his distributor's brand quota most elevated compared to all others (42% in 2010) (CNC, 2011). In reference to the case of Catalonia, distributor's brands represent about 33% of the entire turnover of six on ten enterprises that have developed their own brand (GenCat, 2011a). Details are presented in Table 22 of the Appendix 5.

In addition, quality perception of distributor's brand products has rapidly evolved towards a good alternative in terms of quality-price relation for consumers (Toribio J.J. & al. 2012). Taking in account the actual economic perturbations, consumers' purchase power tends to diminish and their insecurity and averse to risk increase. Consequently, substitution from manufacturer brand to the distributor's one is easily justified (CNC, 2011). The strategy of discount on distributor's brands food products appears as another important factor of its increase in terms of market shares; as consumers have slightly decreased their expenditure rate per visit at the supermarket and are more sensible to price changes (AAC, 2012). In reality, 15% of Catalan consumers affirm to buy distributor's brand products (CNC, 2011). The sales' augmentation related to healthier and wellness products commercialized under distributor's brands represent an important part of their increase in popularity: in 2010 they represented 30% of market sales and 33% of sales value (AAC, 2012). Finally, the development of distributor's brands affects both relations' producer-distributor and distributor-distributor, as they are all trying to catch consumer's attention. In fact, the increase of distributor's brands has evolved in parallel with the higher concentration of retailers (CNC, 2011).

In 2011, the *Association of Supermarkets Chains*, the *Spanish Association of Distributors*, *Self-Services and Supermarkets*, the *National Association of Large Distribution Companies*, the Council of *the Distribution and Self-Service of Catalonia, Mercabarna, Micro, Small and Medium Enterprises*, and finally the *Forum Interagroalimentario - Farmers Union and Young Farmers and Ranchers of Catalonia*, have all signed a decree of good business practices between agents of the food chain. The main objective of this code was to improve relations between the different types of actors of the value chain, by establishing a contractual framework that allows a greater flexibility and security in business transactions, as well as improving their efficiency. It also aimed to give more information to consumers (traceability of aliments for instance), to value the quality of products, a greater food security, more sustainable practices and the respect of animal welfare (GenCat, 2011b).

More information about the role of actors' part of the global food supply chain and their interrelations can be seen in Appendix 6.

5.1.3 SWOT analysis of Catalan global food supply chain

The SWOT method is an important tool for qualitative analysis, as it permits to evaluate the internal and external environment of an organization or a structure, such like a food chain. By pointing out the strengths, weaknesses, opportunities and threats, it seems easier to dress an overall portrait of an entity and understand better its objectives and future challenges (Renault V. & Schultz J., 2013). In the following, it will then be presented a SWOT analysis of the Catalan global food supply chain, mainly inspired from the study *10 keys to understanding the sector* by the municipality of Barcelona and the group of research CREDA (Ajuntament de Barcelona 2011).

STRENGHTS

- Catalan agro-food industry is the largest one in Spain, in terms of sales volume and clusters;
- There is specialized and competent available labor, as well as a recognized entrepreneurial capacity;
- The primary sector is well diversified;
- There is a notable presence of research centers in the territory (IRTA for instance) and Catalonia is hosting various international activities;
- There are diverse professional programs for studying food industry (degrees, post-graduated, technicians).

WEAKNESSES

- There is a low industrial capitalization of companies, leading to small investments in new technologies;
- Industry is fragmented and atomized;
- Most of exportations are executed by foreign international distributors;

- Catalan industry is highly dependent on cereals' importation (around 70%), especially regarding swine production[6];
- The poor transport infrastructure in rural areas limits the access to city centers and commercial establishments[7].

OPPORTUNITIES

- Adapting the offer to changing consumer's habits (aging population, immigration rate, familiar structure, net income, health concerns, GMOs, etc.);
- Developing new market niches in concordance with food-related diseases (celiac, diabetes, cholesterol, obesity, etc.);
- Catalan agro-food industry is taking advantage of the higher purchase power of emerging countries that are looking for new quality products;
- The reduced demand for some particular domestic products leaves more space for exportation (meat products for example);
- Higher investments in research & development from the part of the Catalan enterprises in comparison to the Spanish ones[8].

THREATS

- Considering the context of increment of globalized trade, competitiveness between Catalan multinational companies has increases significantly;
- The instability of prices related to energy, raw materials and others factors of production is increasing the total cost of production and the perceived risk by the different actors;
- Consumers are highly price-sensitive, a factor even more accentuated by the actual crisis;
- There is an apparent tendency against the presence of GMOs in Catalonia. Consumers do not perceived direct benefit or associated it with quality. In contrary, they express certain distrust towards scientific opinion in relation to risk of contamination and crossbreeding[9].

5.2 Local food supply chain

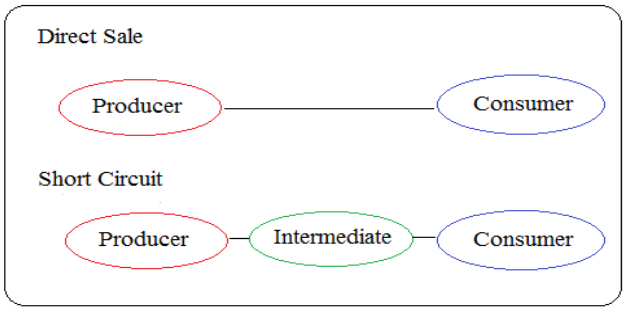
5.2.1 Catalan official local food supply chain definition

As a matter of fact, the *Department of Agriculture, Livestock, Fishing, Alimentation and Environment of Catalonia* have published in 2013 a decree on farm-to-table sales accreditation. Farm-to-table concept is described as the sale of agro-alimentary products coming from the activities of agriculture or livestock, which are the result of a process of elaboration or transformation realized with the objective to satisfy consumer's preferences. The paper treats particularly

[6] (Ferran Garcia-VSF, 2013)
[7] (GenCat, 2008)
[8] (Gil Roig J.M., 2004)
[9] (Di Masso Tarditti M., 2008)

about two possibilities of local food chains: direct selling and short circuit. Direct selling is identified as a sale directly done from the part of the producer of from a group of producers to the final consumer, without the intervention of an intermediate person. Direct sales, they can be realized on the exploitation through a kiosk, in an agro-store belonging to a group of farmers, in a local markets, festivals, through an ambulant shop or at distance (GenCat, 2013a). In another hand, short circuit supposes the participation of an intermediate actor which can be a retailer, a group of producers commercializing products from non-associated producers, an establishment for rural tourism or restaurants, collective restaurants or sales at distance. Short circuit concept in Catalonia is related to the presence of a unique intermediate between producers (and/or group of producers) and the final consumers, as it is represented in Figure 2 (GenCat, 2013a).

Figure 2. Catalan local food chain models



The accreditation *farm-to-table* is a totally voluntary and autonomous intention from the part of the producer, as a way to market his products and get access to new niches of consumers. The use of the logo is absolutely not related to the quality of the products but only regulating the sale structure. As a matter of fact, other certifications can be joined to *Venda de Proximitat* such as: *Organic agriculture, Integrated production, Products from the farm, 0 km* and more (Generalitat de Catalunya 2013).

5.2.2 Relation Territory - Quality

As part of the Mediterranean basin, the Autonomous Community of Catalonia is rich in gastronomy traditions and recognized, among others, for many of its accustomed products such as olive oil, wine, Iberian ham and much more. The respect given to those traditional practices by the population, but also by external niche market strengthen necessarily opportunities of development for the food system. Nevertheless the socio-economic importance of agricultural activities, they are also sources of landscape design and reproduction of socio-cultural patterns. Each culture remodels the original landscape of a territory with material and non-material elements (constructions, crops, roads, etc.), based on shared values, traditions and cultural symbolism (Nogué J. & Vicente J., 2004). This interpretation of the

territory could easily be incorporated into rural development programmes, territorial planning or socio-political strategies.

In this sense, the notion of territory and the emphasis on locality seems researching from the part of the consumers. This reality seems well understood by the politic sphere and applied concretely by the *Departament d'Agricultura, Ramaderia, Pesca, Alimentació i Medi Rural* via some norms and regulations. For instance, the *White Book on Organic Agriculture* recognizes explicitly the link of food quality and territory (DARP, 2006). Then, to better put into actions this art of fact, various nominations have been elaborated through the entire territory of Catalonia. Some of them are related to their geographical situation: Denomination of Origin, Protected Geographical Indication (IGP), Q Brand (from the Catalan government itself), Protected Denomination of Origin (DOP), Guaranteed Traditional Specializations (ETG), while others are not necessarily: organic agriculture, integrated production and food craft (Di Masso Tarditti M, 2011). Table 3 presents a list of Catalan products characterized by their specific nomination.

Table 3. Catalan designations related to territory and food quality

Catalan Designations	Certified products	Examples of Logos
Wine Designation of origin	Alella, Catalunya, Conca de Barberà, Costers del Segre, Empordà, Montsant, Penedès, Pla de Bages, Priorat, Tarragona, Terra Alta	Catalunya DENOMINACIÓ D'ORIGEN
Protected Geographical Indications	Calçots from Valls, Clementines from Terres de l'Ebre, Sausage from Vic, Catalan bread, Potatoes of Prades, Chicken of Prat, Apples from Girona, Torró d'Agramunt.	Pollastre i Capó del Prat; CALÇOT de VALLS INDICACIÓ GEOGRÀFICA PROTEGIDA
Protected Designation of Origin	Rice from Delta de l'Ebre, Hazelnuts from Reus, Cheese from Alt Urgell and Cerdanya, Butter from Alt Urgell and Cerdanya, Butter from Ganxet, Olive oil from Terra Alta, Olive oil from Les Garrigues, Siurana Olive oil, Olive oil from Baix Ebre-Montsià, Pears from Lleida	pera delleida; AVELLANA DE REUS; DENOMINACIÓ D'ORIGEN PROTEGIDA SIURANA
Traditional guaranteed specialties	Panellets, Iberic Ham	 fundación jamón serrano español

Geographical Designation	Catalan Ratafia	
Quality certifications	Candies, Chicken, Rabbit, Cheese, Cookies, Honey, Blue fish, Chicken, Pork, Beef, Lamb, Chocolate truffles and praline Nougat	

(GenCat, 2013b)

In the actual case of the research, the allusion of food as a quality product does not refer only to the satisfaction of the given standards by major industrial actors, but as a more complex and holistic definition of the idea of quality. The fact that suppliers and retailers have developed their own quality product requirements, by which the entire food system has to fulfill, seems nowadays pretty well recognized. However, studies on Catalan consumers who are participating or are aware about alternatives of consumption such as the local food, have demonstrated that the majority of those consider that quality standards should include socio-economic aspects, taking in account the environment resilience, the principles of equity and justice among people and more. In addition, values such as social justice, respect of the culture, equilibration of power between actors of food chain and the development of new relations producer-consumer are part of this quest for quality product (Di Masso Tarditti M, 2011).

As demonstrated earlier, the affiliation territory-quality is exploited by various groups of consumers looking for local food products and conscious that their act of buying local products contributes to re-equilibrate the power between the dominant model of agriculture and the alternative's one. As the origin and traceability of food have become major concerns for Spanish and Catalan consumers in the past years, it appears that they are particularly interested to buy locally produce and native varieties of food, when they are looking for traditional fresh products (AAC, 2012). Regional identity of the product and the territory it belongs to, seem valorized determinants taken in account when it is time to buy aliments (Euromonitor International, 2011, cited in AAC, 2012).

5.2.3 Alternative models of consumption

The development of alternative groups of consumers arrives as a response against the contemporary model of food system. More specifically, it appeared as an opportunity for consumers to choose their food and to be more autonomous in their decisional process. It is in this context of struggle to raise awareness that citizens have started to organize themselves into groups and cooperatives of consumers in the beginning of 2000. The establishment of direct link between producers and consumers as therefore appeared as an approach to reconsider or reinvent ways of providing food. There are actually more than

130 of those entities acting in Catalonia; a well-known example of those groups is born from the Community Supported Agriculture, very popular concept for producers in organic agriculture (Xarxa de Consum Solidari, 2012).

The most important factor taken in consideration for the purchase of food products by those alternative groups of consumers is the proximity of aliments (around 100 km) (Xarxa de Consum Solidari, 2012). The valorization given to the local characteristic of aliments is such an important factor that people (around 60%) prioritize a product from Catalonia no matter if it is organic or not (GenCat, 2012). Consumers have a good consciousness of the impact of transport distance of aliments and about the importance of fair trade products. The Spanish Slow Food movement is a good example of promotion of locally food produced, by sharing an ideology of encouraging local and artisanal producers (Ecolosfera, 2010). This type of consumers seem also to look for types of production that do correspond to their values and sense of ethic (sustainable practices, organic production, small farms, and others), as far as they can make fair price's agreements for both interests of producers and their own (Xarxa de Consum Solidari, 2012). However, more than 90% of consumers have the perception that they pay an over-price for organic products comparing with the conventional ones (GenCat, 2012). Moreover, those entities articulate the desire to share information, knowledge and experiences between groups; thus to establish a transparent and sincere relation with the producer, where they are able to discuss more topics than prices. As demonstrated earlier, the establishment of the link territory/locality and quality of aliments is something underlined in the study *Aspectes practices de les experiences de consum ecologic organizat*, as the notion of quality does not only refer to the appearance, taste and flavor of the product, but also to its nutritive value, the manner it has been cultivated or raised, the socio-economic conditions, etc. (Xarxa de Consum Solidari, 2012).

5.2.3.1 Models of food providing alternatives

For people looking for a different model of consumption, various alternatives have currently been developed and documented among the literature. In fact, taking in account this context of effervescence for socio-political movements related to food, particularly the one related to food sovereignty, numbers of initiatives have hatched. Many NGOs, associations of consumers and producers and collective platform for social actions have arisen since then. Organizations in associations between producers and consumers, or with the intervention of one intermediary, open to a lot of opportunities. Table 4 presents the most popular short-circuit models in Catalonia, principally listed in a study realized by Di Masso Tarditti M. in 2011.

Table 4. Short-Circuit models in Catalonia

Collective gardens	Collective experiences where groups of people are inverted directly to produce the food they will consume. In the case of Catalonia, these initiatives are linked to the fight against property speculation and the claim of public spaces for social uses.
Cooperatives of producers and consumers	This initiative seems at its beginning in Catalonia. It refers to the concept of CSA (Community Supported Agriculture). There is a pertinent experience near Barcelona named the PACA (*Acord per al Consum i la Producció Agroecològics*).
Sponsorship systems	It offers the opportunity to sponsor an animal by paying forehead a certain amount of money to receive latter a proportional quantity of the product of the animal. For instance, a cow can be sponsored to get fresh milk or butter or cheese. The farm *Mas Claperol*, located in the province of Gerona, is pioneer in this concept; they are producing all products based on sponsored organic milk.
Direct sale on farm	It is about consumers that go directly on farm to buy products. It could also refer to sale at small markets or at cooperatives of consumers. In Catalonia, this practice is more popular for wine and olive oil products. Around 5% of Catalan consumers of organic products go buy directly on the farm.
Direct sale on market	It is about selling on stationary or mobile market stands. There are various markets, mostly situated in city centers that represent 19% of sale's volume of organic products in Catalonia (GenCat, 2012).
Direct sale delivered to household or to groups of consumers	In the first case, the food basket has a fixed price and is delivered once a week to each consumer's houses. This case corresponds to 3% of consumers that buy organic products in Catalonia (GenCat, 2012). In the second case, it could be a group of person or families that decide of one point of distribution for the entire group. Most of the time, one member gives at disposition of everyone, a private space to facilitate the operation, such as a garage for instance.
Cooperatives of producers / collective point of sale	Group of producers that decide to joint their offer of products to enable the establishment of a small shop and facilitate its management. This formula necessitates inversion from all members. Another way consists in regrouping producers but without disposing of a determinate selling point. The main aim is then exchanging and sharing products and knowledge between small producers. The *Xarxeta de Productors Agroecològics* (Network of Agro-Ecologic Producers) is a good example. The Cooperative HORTEC is also a successful experience of producers that decided to regroup their offer to facilitate its distribution all around the country; in different selling points, schools and others (HORTEC, 2013).
Restaurants	This initiative refers to the Work Table for Organic Alimentation in Schools, itself includes in the Action Plan for Organic Agriculture and Alimentation (2008-2012) from the government of Catalonia. Actually, there are 36 centers that do incorporate organic menus in their cafeteria.
Cooperatives with shops	There are as well cooperatives of consumers that not only sale products to their members but also to other consumers that can acquire products at higher price. Most of those shops are located in city centers to reach as much consumers as possible. In Barcelona, the *Xarxa de Consum Solidari* (1996) centralizes in one specific point the products from the consumers and distributes it afterwards in different selling points. The shops normally also offer various fair trade products. Those neighborhood shops count for 19% of the organic products sales (GenCat, 2012).
Specialized shops	Specialized shops of organic products prioritize the relation seller-client by giving all necessary information to the consumer. About 50% of consumers in Catalonia buy organic products through those specialized shops (GenCat, 2012).
Cooperatives of	This initiative seems in increased development in Catalonia even if it only

organic consumption	corresponds to 4% of consumers (GenCat, 2012). Groups organize them with producers to get access to fresh, seasonal and local products. The consumers participating have to be members of the cooperative (fees of membership and administration) and have as well to share the work between them (organization of the baskets, negotiation with producers, etc.) (Ribes F., 2012). There are over than 160 cooperatives of organic consumers in Spain (Hispacoop, 2008).
Buying on Internet	Consumers can go directly on farmers' website and pass a command. This model of transaction represents 1% of consumers of organic products in Catalonia (GenCat, 2012).
Milk distributor	There are milk distributive machineries at the disposition of consumers who can buy fresh local milk in bulk, directly from the producer at a very competitive price (Diari de Girona, 2009).

All those initiatives do respond to a request expressed from the part of the consumers that look for other ways to get access to its food products. Even if those alternatives are still marginalized, all studies from the part of the dominant market agree that they are increasing strongly since couple of years and can potentially affect the market in general.

5.2.4 SWOT analysis of Catalan local food supply chain

Once again is here presented a SWOT analysis for the local food supply chain in Catalonia. Most of information has been taken in a study made by the Catalan Council for Organic Agriculture (Consell Català de la PAE, 2005).

STRENGHTS

- The instauration of the *Decret de proximitat 24/13* has positive impacts on consumers' perceptions as it increases the confidence they have regarding those alternative manners of commercialization (GenCat, 2013a);
- Catalan consumers seem more aware on the importance of the quality of products and the general tendency trends towards local and organic products. Direct sale is a model quite generalized that reflect this tendency;
- Consumers appear willing to pay a more elevated price for quality and local products. In addition, they have a high level of fidelity;
- There are various groups and associations of producers to group their offer and sale in local markets more easily;
- There is a good sectorial dynamism reflected by the increment of volumes of production, the support of consumers and the reduction of margins trade, permitting to small producers to have a better control on the set of prices and demand, what makes them more autonomous;
- A special capacity for innovation is noticeable beyond people working in alternative food networks. As well, they focus mainly their strategy of products differentiation.

WEAKNESSES

- There is quite a low level of participation from the part of farmers into associations of producers, especially the ones dedicated to alternative productions (ecologic, multi-activities on the farm,

agro-tourism, etc.). It limits therefore the possibilities related to their negotiation power, access to credit, etc.;

- It does not seem like there is a real marketing strategy developed for the promotion of local products. The appreciation from the restaurants and producers appear as relatively little compare to others (Londoño L.M.P., 2008). More specifically, the commercialization strategy of ecologic products remains poor in Catalonia: high prices, un-regular offer, lack of credibility from the part of consumers, high pressure from imported products, difficulties to find market, limited structure of actual operators, are all factors limiting the increase of alternative productions;
- There are very few possibilities for farmers to sale their products due to the difficulty to reach the large distribution (a part of the direct sale, there is no other real possibility);
- Very few information regarding prices and costs of production for products that are not submitted to conventional treatment (self-reference);
- The high prices of local or ecologic products can represent a risk for the future, as they will only be reserved to those who have a more elevated purchase power.

OPPORTUNITIES

- Catalonia has an interesting opportunity to demark itself as an important producer of Mediterranean products (olive oil, rice, wine and vegetables);
- The increasing interest for quality food from the part of the consumers takes to believe that it would possible in a near future that the demand exceeds the offer;
- Logos and certifications are good way to promote local products and be recognized by consumers. Some of them are coming from the government itself, while others come from producers and consumers' associations (Londoño L.M.P., 2008);
- Catalonia seems a growing destination tendency for tourism. The orientation through gastronomic tourism seems feasible taking in account its historical and socio-cultural context;
- Promotion of local food represents a good opportunity for the *Center of Conservation of Agricultural Genetic Patrimony of Catalonia* to stimulate local varieties to farmers.

THREATS

- The criterion of one single intermediary in short circuit distribution definition makes farmers more vulnerable to the entry of products from others Autonomous Communities at lower prices, what can increase the competition within the territory of Catalonia;
- The stronger norms related to Catalan organic production comparing to the rest of Spain could discriminate the products in the markets;
- The pressure from super and hyper-markets challenges the survival of small regional commerce which treats mainly with small producers. As most of customers ready to buy local products are disposed to pay a little more for them, some intermediates take advantage of this fact by requiring excessive commercial margins through speculation;
- A poor knowledge on the market disadvantages definitely the marketing of local products;
- The seasonality of products seems also a threat for consumers to buy local.

After having dressed a general portrait of the actual general situation and context of Catalan local and global food supply chains, the following Chapter 6 is presenting the analysis of the results from the literature review, as well as the discussion.

6. Results and Discussion

6.1 Specific analyses of families of codes and codes

As related above, the 19 codes found during the document analysis with Atlas.ti have been grouped into 6 major families. The next analysis reports more details about performance perceptions, extrapolating the meaning of each family and code by justifying their presence. For each code, the results of their interpretation, that is to say the attribute, will be firstly exposed in a figure of presentation and finally, the different perspective's aspects of performance are exposed in a table.

6.1.1 First family of codes: Market

The family Market joins together six different codes: Cost, Price, Profit & Distribution of profit, Access to market, Negotiation power and finally, Market share. Their focus stands mainly for the economic point of view: the Commodity discourse is present in 77% of the total citations, and mentioned 68% of time as first and only discourse. As well, the economic dimension is present in 85% of the citations; the ethic dimension is coming second with 6%. Finally, market sphere is represented 68% of time while the public one is present on 28% of times; there is a strong link between those two spheres as they are present in 30% of cases.

6.1.1.1 Cost

The code *Cost* is most of the time interpreted as an economical cost, that is to say, the cost of production. The attribute *cost of production* is understood under two perspectives; one from the farmers' point of view that hardly compensate the cost of production with their incomes from sales since they do not receive a fair amount of money for their production, and the other one takes in account the cost of transport, which is also referred several times. Most of quotes are shared between the commodity and livelihood discourses, this last principally when it refers to the small producers' perspective. In addition, the code *Cost* also relates to environmental cost of the activities of production and commercialization.

It seems interesting to report those different interpretations as the industry uses it like an index of productivity, while producers talk about their need to constantly minimize it, as the cost of primary resources is often too elevated for them (considering sale prices). In addition, farmers relate their incapacity to live only from the sale of their products; they are consequently dependent of governmental helps such as payments and subsidies. Table 5 presents the different perspective of performance.

Table 5. Performance perceptions of the code: Cost

Economic performance	The participation of farmers into the GFSC model unable them to receive a just and fair payment for their work that compensate the costs of production. Alternative models of commercialization may reduce costs of transport.
Social performance	Not mentioned.
Environmental performance	Alternative models of commercialization can easily be related to the environmental performance, since they can decrease the ecological footprint of the food chain.

6.1.1.2 Price

The code price can be associated also to different meanings: in terms of costs for the consumers (purchase prices) or affordability. In fact, many quotes concern directly the consumers' points of view; it relates the fact that they are price sensitive (especially since the beginning of the crisis) and do not have enough information about food products. In another part, the large majority of citations reflect the market sphere perception (mainly economic dimension), which is price leader. Only one makes reference to quality certification and short-circuit model as a way to stabilize price for certain niche of consumers. Finally, one quote is relating directly with the global market, saying that Spanish products have a good quality/price relation.

Actors of the market sphere are present in the majority of quotes, arguing the ideas of the commodity discourse. Table 6 presents the perceptions of the code price.

Table 6. Performance perceptions of the code Price

Economic performance	Large firms of GFSC model fix purchase prices. They have the control to decide the amount of money paid by customers. Most of quotes mention GFSC as price fixer. In opposite, short-circuit model helps to not create economic disequilibrium within the food chain.
Social performance	Only one quote underlines the differences in terms of purchase power between groups of consumers, as well as the lack of transmission of information from firms of the GFSC.
Environmental performance	Not mentioned.

6.1.1.3 Profit & Distribution of profit

All the citations take place between the commodity and livelihood discourses. Public sphere expresses most of the citations while market sphere is present in second position. The code Profit & Distribution of profit is underlining in a first part, the inequity of profit distribution to farmers. Secondly, it is mentioned that groups of producers such as cooperatives can help small producers to be more profitable; that payments from the government are not fairly distributed; that direct sales could represent a good opportunity to increase farm profitability, just like the strategy of differentiation of product and value added. Finally, it seems that companies put special attention to their profitability, as it is for them a performance index. Actors of the policy sphere also recognize this fact, as agro-food industry is an important sector of the economy. Table 7 presents the different perceptions of performance related to the notion of profit.

Table 7. Performance perceptions of the code Profit – Distribution of profit

Economic performance	LFSC is seen as a solution for farmers to increase their profit. Examples such as direct sale, diversification of products and cooperatives of producers are mentioned.
Social performance	Training to producers is reported as a way to help farmers to expand their possibilities to increase their profit.
Environmental performance	Not mentioned.

6.1.1.4 Access to market

The code "Access to market" could be understood in three different ways, as it has been identified in the literature: in its economical and physical senses of interpretation and finally, as an enterprise orientation through markets.

Most of quotes has been mentioned in the literature belongings its economic interpretation. It refers therefore to strategies used by large firms or enterprises to get a better access to the market: firm's concentration phenomenon, effects of fierce competition, centralization of the offer, privatization of resources, etc. Among this interpretation, many quotes are referring to producers' difficulties to get access to markets, to the negative commercial balance of Spain and to the atomization of the Catalan agro-food industry. Two different contexts make reference to this last: one as a disadvantage for competition and access to market, and the second one as a limiting factor for producers to first get access to market, but also to other services like information, formation, access to credit, etc. In another part, the code "Access to market" is directly referring to its physical property, that is to say, its intrinsic characteristics. While one is referring to the fact that Catalonia is an important strategic base of the Mediterranean basin, the other one mentioned that it could be difficult for farmers to have access to

services and reach the consumers because of the location in the rural zone. Also, the code has been used to refer to the enterprise orientation through the market, that is to say the consideration of farms as real enterprises.

Commodity discourse is the most cited, argued by actors of market sphere. Table 8 synthetizes the performance perspectives of the code access to market.

Table 8. Performance perceptions of the code Access to market

Economic performance	Atomized enterprises within the GSFC run the risk to diminish their economic efficiency, while concentration and high integration would permit them a higher efficiency. Catalan commercial balance is negative and importations of animals' feeding in responsible of a large part.
Social performance	Not mentioned.
Environmental performance	Not mentioned.

6.1.1.5 Negotiation power

The code "Negotiation power" related both side of the food chain: the alternative model's point of view and global scale model perspective. From one side, the code relates the disempowerment from the productive part against the large firms and the fact that GFSC is affecting and causing an unbalanced power among the food system actors. In contrary, it also mentions that food alternative networks, such as short-circuits or simply associations of producers can be interesting solution to help increasing the negotiation power of farmers against the large market. Alternative models of commercialization are as well mentioned as possibilities to increase farmers' negotiation power.

Basically, the code negotiation power makes reference to the commodity discourse, underlining the economic dimension. Next table presents the perceptions of performance related to the negotiation power.

Table 9. Performance perceptions of the code: Negotiation power

Economic performance	The large majority of citations are referring to the unbalance negotiation power between the producers and the market (GFSC). LFSC is presented as a way to increase farmers' weight in front of global food system.
Social performance	The non-equity of negotiation power between producers and larger enterprises bullies small farmers' opportunities.
Environmental performance	Not mentioned.

6.1.1.6 Market share

The code "Market share" aims to reflect the competition between firms, their positioning statement, the place of small enterprises into the large market, the entry of foreign products and much more. In the actual analyzed literature, most of quotes are linked to the Catalan commercial balance, mentioning Spain at its first market. Also, that there is an invasion of exotic products.

The commodity discourse corresponds to all quotes. Table 10 is resuming the perceptions of performance of this code.

Table 10. Performance perceptions of the code: Market share

Economic performance	Negative commercial balance of Catalonia when it refers to the global food chain model. Large firms within the GFSC hold a great market share in from of firms within LFSC.
Social performance	Not mentioned.
Environmental performance	Not mentioned.

6.1.2 Second family of codes: Quality

The term "Quality" in the actual context of long and short food supply chains induces a very large range of issues and notions. This family has numbers of different definitions, presented above:

a) Quality of food product

It includes the nutritive value, the organoleptic characteristics, the appearance, flavour, all different requirements from consumers, etc.

b) Quality of life of producers

Improving life conditions of farmers, incrementing knowledge by sharing experiences and information, through formations, etc.

c) Certification of quality

Catalan and Spanish governments are developing since couple of years certifications on quality product, which can refer to its origin, its way of cultivation or rise, the process it has been submitted to, etc. Those certifications include the Q brand (Catalan certification), IGP, DOP and others.

d) Quality of environment

This last signification of quality refers more to externalities coming from agricultural activities, processes of transformation or supermarkets responsibility to recycle, etc. In the present literature, there is no mention of quality of environment. Nevertheless externalities of agricultural activities and from firms of transformation are more and more an actual topic of interest, it still seems important to mention it.

The Quality family was first designated as the code "Quality", strongly related to others codes such as "Health" and "Food Safety". Food safety corresponds to the sanitary norms mostly dictated by governmental authorities, but also by the industry. Actors of market sphere play a primordial role in this sense, as they are main leader in terms of hygienic criteria and food safety within the whole food chain. In another part, quality of food, as well as quality of life and quality of the environment are all factors influencing human health, put in relation several times among the quotes.

To better recognize the stretch link between those codes, the report *Compra pública en sistemas alimentarios locales, Impactos sociales, ambientales y económicos* (Ferran Garcia-VSF, 2013) mentioned that longer and more complex is the food chain, higher are the risks. Those risks can be a prejudice for health but are coming from criteria of food quality product and norms of food safety.

Most of quotes are shared between the livelihood and the commodity discourses, argued principally by actors of the public, market and policy spheres. Quotes are relating to the economic, social and health dimensions.

Table 11 resumes finally the performance aspects of *Quality*, tempting to link the interpretation of those attributes with the models presented.

Table 11. Performance perceptions of the family Quality

Economic performance	All citations categorized under the attribute *Quality of life*, link it to local food chain or agriculture of proximity, as a way to increment standards of life.
Social performance	It is then remarkable than from the overall actors' perspectives, LFSC model is a better reference in terms of quality -including quality of products, certification of quality and health categories- than the global food chain model.
Environmental performance	It seems to have recognition from the positive impacts on the environment from the certification of quality of food products. Once again, most of certification is reliable to alternative model of agriculture.

6.1.3 Third family of codes: Sustainable practices

Quotes related to Sustainable practices family have been codified under Environment and Energy codes. They are all referring to environmental dimension. Furthermore, most of quotes make reference to the promotion of the protection of environment, to better practices that can be done to conserve the environment, etc. In opposition, some of them use the term "sustainability" to denunciate acts of pollution, causes of contamination or non-respect of ecological practices. Finally, the concept of sustainability was used to codify the non-efficiency of the actual model of production in energy terms.

The negative effects on the environment derived from the food supply chains could be avoided or decreased by the expansion of organic production and the consequent diminution in the use of agro-chemicals. The expansion of the agriculture of proximity or short circuits is seen as a way to decrease the environmental and energy costs of transport, and the dependency on fossil fuels.

The commodity discourse is present in more than the half of the quotes, following by the livelihood discourse. The environmental dimension is certainly the most represented across the citations, even if the economic one is also present. Actors of both public and market spheres are the ones arguing about sustainable practices. Table 12 presents the results of performance.

Table 12. Performance perceptions of the family: Sustainable practices

Economic performance	There is important critic that related both the economic and environmental performance by mentioning the total dependency of GFSC to importation of primary energy (fossil fuel and fertilizers); a reality that reduce the efficiency of the model.
Social performance	Participation from the population seems essential to encourage the promotion of LSFC model.
Environmental performance	GFSC is considered as responsible of environmental disequilibrium and high ecological footprint; LFSC is presented as a solution to minimize the impact of agricultural activities on the environment; Lot of citations related to the resilience capacity of ecosystems, the abuse of resources, the positive impacts of organic agriculture and the importance of the support from public policies.

6.1.4 Fourth family of codes: Public well-being

This family includes codes such as food security and food sovereignty. The public policies linked to food system are vast and affect directly or indirectly all dimensions that are supporting a society. They can vary depending on the government, the general tendencies encountered in the society, some internal or external perturbations like an economic crisis, an important drought, the increase demand for a certain

food product, a price dropped, etc. However, all agree that policies around agricultural activities and the entire food system are particularly sensitive. Agricultural policies affect directly rural regions -their occupation, socio-economic activities, landscape design, environmental norms and regulations, etc.-, purchase power of consumers, people's health, aids to farmers, and much more. In another part, food represents for many a cultural expression. Public agricultural policies have consequently to take in account all those perspectives and different needs.

The analyzed literature shares the central ideas of the right discourse among with the commodity and livelihood ones. Particularly, literature reveals a change regarding public policies and general population regarding concepts of food security and food sovereignty. Most of the time, the concept of food security is interpreted through its economic sense, mostly referring to the national dependency of importations of products. In the same line of thoughts, food sovereignty is more related to the social and economic dimensions, underlining the right of people to participate in deciding about the food system. Finally, there is a need for the development a public policy taking in account a more complete vision of the food system, underlining the ideas of sustainability, durability of agriculture, increase of population health, protection of the environment, etc. All those states are resume in the next table.

Table 13. Performance perceptions of the family: Public policy

Economic performance	Concerns on food security, food sovereignty and importation dependency re-question the efficiency of the GFSC model.
Social performance	Policies supporting local development are present in almost the half of the total of citations. LFSC is then an inspired model for public policies.
Environmental performance	Only mentioned once, public policies take in account the environmental impacts of agricultural activities, from a local point of view.

6.1.5 Fifth family of codes: Innovation

The family of codes *Innovation* could be divided into three kinds of innovative capacities:

a) Innovation related to the product: value added, certification of quality, designation of origin, etc.;
b) Entrepreneurial innovation, which refers to efficiency, new technologies, market orientation and others;
c) Social innovation: festivals or publicity for consumers' awareness (e.g. about healthy food).

Most of quotes are referring to the economic dimension, revealed in majority by the market and the public spheres. The main discourse is the commodity one, following by the livelihood discourse. Table 14 presents the resume of the perceptions of this family.

Table 14. Performance perceptions of the family: Innovation

Economic performance	It seems that enterprises into the GFSC model have a constant need for innovation (entrepreneurial innovation and/or innovation of product) to stay in competition one against the others. Small farms appear to have difficulties to adapt to new innovations (technological or others), sometime for a lack of investment, sometime for a lack a vision.
Social performance	The only statement related to social performance underlines the creation of links between actors of the food chain via festivals and exhibitions.
Environmental performance	Not mentioned.

6.1.6 Sixth family of codes: Territory

The notion of territory refers to a concept much more complex than the simply vision of a geographic area. Starting from a territorial planning concern in respect to local needs and particularities, the concept developed by French government in the 70's has evolved in such a way that it is nowadays considered as the base of the concept of multi-functionality of agriculture. Most of the definitions put in relation three dimensions related to the concept of territory: the functionality of the geographical space (biophysical functions, economic activities, etc.), the socio-cultural aspect (culture, know-how of people, etc.) and the symbolism, that are the perceptions of natural elements by the population (Gaudicheau F., 2007). In fact, organization of space is strongly influenced by the agents present in a geographical space where values, ideologies, but also, economic and politic views are represented (Di Méo G., 1998, cited in Moine A., 2006). Finally, territory is defined as a complex and constantly evolution system that associate actors, a define space and the representations of the actors within this space (Moine A., 2006).

Through those definitions of the concept of territory, two general items can be distinguished from the quotes: the economic item and the social one. Economic point of view could include both macro[10] and micro-economics[11]. Macro-economics is expressed in terms of employment rate, creation of value inducing profitability, productivity, GDP, PIB, etc., while micro-economics is related to the presence of cooperatives of producers and of land management including land owning, land pressure, surface

[10] The macro-economic branch is dealing with concepts of performance, efficiency, flux of capital, creation of value, employment rate, structures of the system, general tendencies of the market, decision-making, etc., all base on a national perspective (Blanchard O., 2011).

[11] The micro-economy is a branch of the economy that is centralized to the firm or enterprise level and to the individual household level, where behaviour and decision-making are analyzed at a smaller scale than in the macro-economic study. Microeconomics examines the impacts and influences of decisions and behaviours on demand and supply of goods and services. Microeconomics is related to farm level, where games for competition are centrals, determining prices, quality standards, budget and more.

minimum for profitability and much more. From those two perspectives, the analysis aims to evaluate the food system in its entirety, taking in account interaction between actors, technologies, information and capital. From the social item point of view, *Territory* is interpreted through socio-political actions, which mean the participation of producers, consumers or others civil citizens in food system, as well as the establishment of interrelations between actors of the food chain. For instance, lot of quotes relate the notion of proximity, of local markets and short-circuits models, while others mention the important exodus of youth people from rural areas to city centers and the need to revitalize those regions.

Most of the quotes are linked to the economic and social dimensions, cited in the commodity and livelihood discourses. Table 15 presents the perceptions of performance of the family of codes *Territory*.

Table 15. Performance perceptions of the family: Territory

Economic performance	Under the macro-economic code of the Economic item of interpretation, GFSC is seen as a maker of employment and a creator of value for the national economic sector. From the micro-economic code, the size of the farm seems an important factor for competitiveness under the GFSC model. In second part, cooperatives of producers appear to generate more economic value.
Social performance	LFSC is cited as a way to revitalize rural regions (reduce the exodus of young people), to encourage farm production activities and to promote the share of knowledge and experiences between farmers and consumers.
Environmental performance	Not mentioned.

6.1.7 Resumes of the analysis of families of codes and codes

From the overall analysis of families of codes, different main perceptions can be extracted as a way to capture tendencies and general opinion among Catalan population. The first central perception coming from different combinations of discourses rely on the un-equity relations of power for farmers against large firms and the un-fair payments they received for their work. This point of view is mostly encountered in the economic aspect of the performance, even if the idea also has a strong relation with the social dimension of performance. This last is only reported in the code *negotiation power*.

In respect to the social aspect of performance, many perspectives are presented in respect to the different actors it relies to. Nevertheless, all results from social performance perceptions underline the LSFC model as a possible and feasible way to promote rural development and encourage farmers in their activities. The concern about the revitalization of rural regions is also perceived among the population that accentuate the importance of the role of the policy sphere in this domain. Finally, there is a higher perception of quality, in terms of quality of products and quality of life for producers, when the attributes

are under the management of alternative models. In addition, there is a very positive perception in relation to the establishment of links between producers and consumers, one of the essential characteristics of the alternative model of production and commercialization.

Regarding the environmental aspect of the performance, it seems pretty clear that several propositions, part of the alternative model of production, are perceived positively in respect to their impacts on the environment. Certification of quality, short-circuits model and organic agriculture for instance are all perceived as their practices minimized the impacts of the environment. Role of public policies has been specified as primordial for the promotion of good environmental practices and minimization of negative externalities. In contrary, GFSC has explicitly been cited as causing imbalance in the environment, from the public point of view. Finally, people seem aware of ecological footprint of aliments and the consequences of long transport of food products, in reference to the notion of food miles. This is finally why they also have a positive sensitivity to food produce locally.

6.2 Analysis from Alceste software

The qualitative data analysis realized with Alceste software includes fourteen reports, studies and documents, representing almost the double of evaluated documents comparing to Atlas.ti analysis. The provided analysis aimed to underline the performance aspects taken in account by the global and local food supply chains. To do so, documents were classified in a first plan under their sphere of belongings, to better examine their different perceptions regarding food chain performance. A hierarchical descendant classification was carried out by the software to extract the main discourses' aspects treated in the documents. In resume, the objective was to find out the main aspects of a discourse argued by a certain sphere, to better catch their perceptions of performance.

Table 16 presents a comparison of the results found by Alceste software with the codes established from the Atlas.ti analysis. Also, those results are finally linked with perspectives of performance –economic, social and environmental- to better extrapolate and justify the outputs.

Table 16. Comparison of Alceste and Atlas.ti results

Market sphere		
Performance aspects from Alceste	Relation w/ Codes found in Atlas.ti	Performance perspectives
Price of products	Price	Economic
Employment rate & Quality of jobs	Quality of life	Social
Product availability	Access to market & Negotiation power	Economic
Economic efficiency	Profit, Cost & Market share	Economic
Commercial density	Access to market	Economic

Quality of products	Quality of product	Economic & Environmental
Facility to control/regulate	Food safety	Social
Benefits	Profit - Distribution of profit	Economic
Policy sphere		
Performance aspects from Alceste	Relation w/ Codes found in Atlas.ti	Performance perspectives
Ability to promote innovation and knowledge	Innovation & Participation	Social
Encouraging local jobs' opportunities and rural activities	Territory	Social
Quality of products and Healthy products	Quality of product & Health	Social
Availability of local products	Access to market & Negotiation power	Economic & Social
Autonomy of revenue	Profit - Distribution of profit & Cost	Economic
Free access to market	Access to market	Economic
Land use problematic (agriculture or urban constructions)	Territory	Economic & Social
Value added and prices to consumers	Price	Economic
Public sphere		
Performance aspects from Alceste	Relation w/ Codes found in Atlas.ti	Performance perspectives
Ability to produce value added to products	Innovation related to the product	Social
Fair share of value added	Profit - Distribution of profit	Economic
Impacts of international trade	Access to market	Economic
Purchase price	Price	Economic
Norms of quality related to the work	Public policy	Social, Economic & Environmental
Availability of local products		Social & Economic
Increase social cohesion	Territory, Participation & Association	Social
Environmental quality of products	Sustainable practices & Quality of environment	Environmental
Scientific sphere		
Performance aspects from Alceste	Relation w/ Codes found in Atlas.ti	Performance perspectives
Quality and repartition of employment	Territory	Social
National food sovereignty	Public policy	Economic
Sustainability	Sustainable practices	Environmental
Competitive capacity of enterprises	Access to market & Negotiation power	Economic
Territorial planning	Public policy, Territory	Social, Economic & Environmental
Total benefit	Profit - Distribution of profit	Economic

The last table permits to demonstrate clearly the validity of the results found through the Atlas.ti analysis. As the codes revealed with Atlas.ti programme are mostly resulting from own interpretation of the texts,

it seems quite important to assure a certain degree of concordance between those subjective results and more objective ones.

In addition, because there are no mentions of the specific context of the groups of words found by Alceste programme, it does not seem possible to extrapolate them into their main discourses of belongings or even the entirety of reliable dimensions. Interpretations are possible, but real representation of the reality cited in those texts is still uncertain. However, those complementary analysis permit to justify one method against another, and find an equilibrium between self-interpretation and more objective software analysis.

6.3 General Analysis

6.3.1 Analysis from Atlas.ti software

Through the analysis of the selected texts, almost 210 citations have been found with Atlas.ti, underlining various issues and problematic highlighted by the different actors of the food supply chain. Those citations have been categorized into 19 codes that have been further on assembled to become 6 general families of codes. Those families are: Market, Quality, Sustainable practices, Public policy, Innovation and Territory. Families of codes have been created with the objective to sustain the analysis of data beyond the first context and general understanding of the quote. For instance, the family of codes Quality includes as well the codes Health and Food safety, as it is assumed that quality of product influence human heath. More details will be given further on, in the specific analysis part.

Therefore, all quotes concern the actual general analysis, without taking in account their family of belongings or the code it refers to. The idea in the following sections would be to build the different discourses emerging from the spheres. In doing so, it will be possible define attributes of performance and to assign a meaning to them according to the point of view (i.e. discourse) from which the attribute emerges. From the entire set of analyzed documents, Table 17 presents synthetize proportions of encountered spheres, discourses and dimensions of the total of quotes.

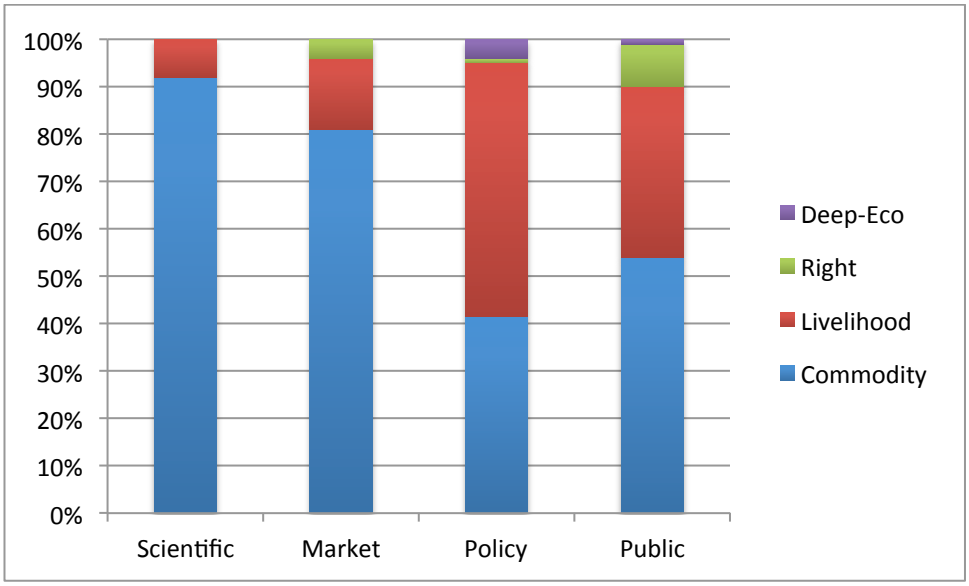
Table 17. Proportions of quotes in relation to their spheres, discourses and dimensions of belongings

Spheres	Market 26%	Public 31%	Policy 27%	Scientific 16%	
Discourses	Commodity 63%	Livelihood 31%	Right 4%	Deep ecology 1%	
Dimensions	Economic 63%	Social 14%	Environment 13%	Health 3%	Ethic 6%

To simplify quote classification, they firstly have been categorized under their main sphere of belongings, that is to say, the sphere of reference that has written the document. As mentioned earlier, eight texts were chosen (two per spheres), based on their holistic representativeness of Catalan food system. Nonetheless their equal representativeness in terms of texts, it appears that quotes referring to scientific sphere are less presents that the other ones that are more or less similarly represented. The majority of citations refer however to the commodity discourse (63%) and are linked to the economic dimension (63%). As it is possible to notice, deep ecology discourse is almost absent (1%), due to the scarcity of recognition of the main elements of this discourse in the literature. As well, health dimension is surprisingly poorly represented, only in 3% of quotes.

As the spheres induced different actors that have various points of view and visions about food chains, each sphere enclose therefore most of the four discourses, as presented in Figure 3.

Figure 3. Discourse's proportions in relation to spheres



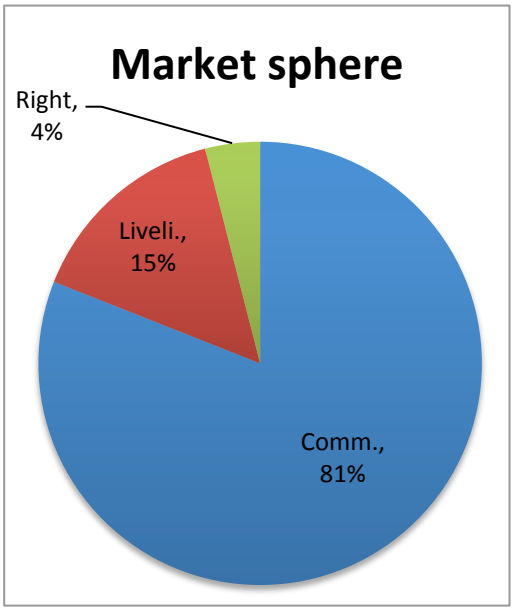
There is a notable supremacy of the commodity discourse in almost all spheres a part of the policy one; particularly in the market and scientific spheres, which detained respectively 81 and 86%. In the following, an analysis in respect to each sphere will be presented.

6.3.1.1 Spheres' perspectives analysis

This section next exposes the analysis of perspectives of performance for each sphere, with a detail about their main discourses of belongings. In Appendix 7, all details, in percentage regarding the interrelations of spheres, discourses and dimensions are presented.

Figure 4. Market sphere analysis of discourses

1- Market sphere



Within the market sphere, actors refer most of the time to commodity discourse (81%) and the livelihood one (15%). Economic dimension detains 88% of total quotes within in the market sphere. The following presents the main ideas cited in the commodity and livelihood discourses, as well as the combination commodity-livelihood discourse.

a) Commodity discourse (81%)

Commodity discourse relies mainly on the economic dimension, which is represented in 95% of the citations.

This combination is covering a large variety of attributes found in the literature: cost of production, prices to consumers, distribution of profit, products innovation, access to market, and much more. However, five main typologies compose the commodity discourse of the market sphere. The first one refers to the general context where evolve food chains in Catalonia: it underlines the negative commercial balance and the important atomization of the agricultural sector. In a second point, it relates the constant need of innovation from the part of enterprises, both for small or large ones, as well as the unfair accessibility to those innovations regarding technologies, information and more. In third, commodity discourse of market sphere specifies the need of constancy of quality products, of their traceability and continuous offer in time and space. It also mentions that Spanish products in general have a good price-quality relation that enables great rate of exportations. Prices to consumers are very influenced by competition of firms, the phenomenon of concentration and firms' integration. It is also described as absorbing most of costs of transaction, storage and more.

Finally, commodity discourse makes also reference to the difficulties for producers to get access to the market and to the inequity of the distribution of profit among the food chain.

Perceptions of performance

In relation to the perceptions of performance from the commodity discourse's point of view, that enterprises part of the GFSC model represents a general higher opportunity for economic performance than the local food system. The main reason of this though is based on the effects of competitiveness on purchase prices, the lower costs of production, the higher negotiation power and access to market, etc.

b) Livelihood discourse (15%)

Livelihood discourse often relies on the economic dimension (63%), but as well as the social one, in a proportion of 33% of times.

There is an important noted exodus of rural regions in Catalonia, which can bully agricultural activity sector. As well, the low access to services from the part of the farmers diminishes their chance to get access to consumers. Finally, livelihood discourse of market sphere mentions that cooperatives of producers are a way to create more value.

Perceptions of performance

Regarding livelihood discourse perceptions, cooperatives of producers, part of the LFSC model, are mentioned as a possibility to create more value to producers that reflect the economic performance. Alternative models of production are also seen as a way to increase social performance of rural region, by reducing the rate of exodus.

c) Commodity & Livelihood combined discourses (16%)

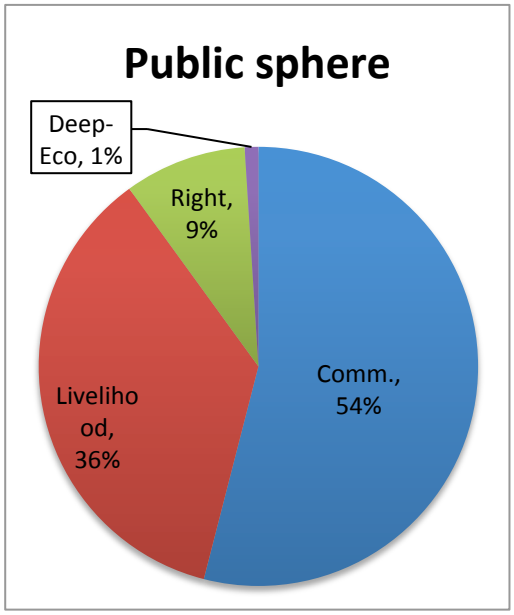
Following a previous point mentioned in the livelihood discourse, the quotes that are both referring to the commodity and livelihood discourses are relating the difficulties for producers to get access to the large market, even if they are part of a cooperative. Their low rate of efficiency and innovation do not permit them to adapt with facility to new technologies. In contrary, cooperatives are described as a solution to help farmers to increase their profit and their negotiation power against the larger firms, part of the GFSC system.

Perceptions of performance

Finally, the combination commodity-livelihood discourses of the market sphere mentions once again that cooperatives of small farmers could be a way to increase their economic performance, still taking in account the ambient of farmers.

Figure 5. Public sphere analysis of discourses

2- Public sphere



In the public sphere, it mostly arises the commodity and livelihood discourses, as it is possible to see in Figure 5. Even if deep- ecology discourse and the argumentation on right have a small representation, they are still present and have therefore to be analyzed. Also, most of quotes from the public sphere are referring to the economic dimension (51%); nevertheless there is quite a good representation of the entire set of defined dimensions: social (14%), environment (10%), ethic (15%) and finally health (9%). This dispersion of quotes into different discourses and dimensions reflect well the variety of perceptions, concerns and visions that can be found within the society. In the following, the main ideas related to the commodity and livelihood discourses, as well as the combination commodity-right, commodity-livelihood and finally right-livelihood will be presented.

a) Commodity discourse (54%)

In the commodity discourse of the public sphere, most of quotes are related to the economic dimension (73%). However, all dimensions are represented through the discourse, coming in second place the environmental aspect (9%), health (7%) and finally social and ethic dimensions with 6% each. Diversity of ideas is therefore well reflected across those possibilities of combinations discourses-dimensions.

The first central aspect related by the public sphere arrives from the concept of globalization, which is seen from two opposite points of view. The first one reflects the perspective of global food chains that look for the control of primary resources and the access to market at global scale. This vision of large firms into a global market encourages firms to integrate and concentrate with the objectives to have higher power of negotiation and compete better one against the others. Once large firms detain control on resources, their negotiation power reach a much more higher concentration, which is reflected in their final benefice and enable them to control final prices to consumers. In opposition, public sphere perceives also globalization as a contradictory argument in relation to food sovereignty concern. The invasion of exotic products, the dependency on importation of human food products, but also for animals' breeding put the national situation in a negative commercial balance, pending on the changes of international prices. From this point of view, GFSC is more viewed as negative as their perspective of the food system seems therefore centered in a vision of optimization than taking in account the general well being.

In a second part, public sphere underlines the fact that purchase prices do not reflect costs of production, but are most of the time dictated by large firms and the big distribution. The difference between original and final prices remains very elevated and the Common Agricultural Policy (CAP) is cited as a factor of explanation. By alleging prices to drop and compensating farmers in another side, the CAP engenders dependencies of many farmers from subsidies or monetary helps. In addition, there is an inequity in the distribution of subsidies helps among the producers. Costs of production are constantly increasing what diminish the final profit of producers and increase their cost of opportunity. Low negotiation power of farmers against large firms does not enable them to receive fair prices for their products and bully them in their access to the market, notably in restaurants. Finally, it is also mentioned that there is an unfair distribution of profit among food chain and both consumers and producers are quite disempowered in respect to their capacity of decision: varieties to produce or to consume, prices to sale or to buy, etc.

Thirdly, consumers perceive positively the designation of quality of products even of their lack of awareness concerning the impacts of always looking for the cheapest food product to buy. As well, there is a misperception about food safety of products coming from the dominant chain. Both small farmers than large firms have a constant need for innovation, as it seems essential to stay competitive to afford new markets. Finally, GFSC is seen as creation of environmental disequilibrium, in contrary to the LFSC model is viewed as decreasing the ecological footprint.

Perceptions of performance

Economic performance of the global food chain model is seen positively as it is related to the phenomenon of globalization that implicates efficient use of resources and their optimization. Also, it takes in account the competitive advantages of firms in the global scene by importing/exporting products. In another hand, the concern related to food sovereignty brings a negative perception regarding the incapacity of global food chain to satisfy national demand. The perception of economic performance of small farmers, part of the LFSC, is seen negatively as they are dependent of the payments of the government (subsidies and others) from the part of the CAP. Their poor negotiation power and their difficulties to get access to the market do not permit them to receive a fair part of the profit from the food chain.

In relation to the social performance, public sphere underlines the low decisional capacity from the part of consumers and producers against the dominant system and the need to democratize food systems. As well, designation of quality of products is seen positively and then valorize from the part of the consumers.

Finally, GFSC is perceived as a creator of disequilibrium for the ecological balance. In contrary, local food model is viewed as a way to reduce ecological footprint.

b) Livelihood discourse (36%)

Livelihood discourse into the public sphere seems present in all the dimensions with more or less, similar proportions: economic (23%), social (22%), environment (9%), ethic (30%) and health (15%). It is in reality the most equilibrate combination of sphere-discourse between all, as it is possible to see in Appendix 7. This fact reflects well the concerns of the society that touch multiple branches of those complex systems.

The large majority of quotes from the livelihood discourse makes direct reference to the local food supply chain, mentioning it as a way to increase the quality of life of producers, as a chance for them to receive a more fair payment for their work and as a way to support sustainable practices from both, part of farmers and government. LFSC models are perceived as a good manner to reduce risks of contamination and diseases linked with food consumption. Local and seasonal food products are promoting good consumption habits and are perceived as synonyms of health from the part of consumers. Because of the creation of direct links between producers and consumers, local food systems are based on the re-socialization of those actors, where information is transmitted directly between them. Finally, it is mentioning that the incorporation of those models into public purchases could be a very interesting way to promote such practices and enlarge possibilities of producers' part of local food chains. In contrary, GFSC is described as producing important quantity of greenhouse gas emissions.

Perceptions of performance

Livelihood discourse of the public sphere mentions the importance of direct links producers-consumers to exchange information on quality, traceability, health, etc. of food products. As well, local and seasonal food products are promoting good and healthy habits of consumption, encouraging at the same time socio-economic activities in the regions. Finally, concerning social performance, LFSC models are perceived as a way to increase the quality of life of producers.
Local food systems get a positive perception from the part of the public sphere in reference to their support to sustainable practices. In contrary, GFSC is perceived as a generator of greenhouse gas emissions.

c) Combination Commodity-Livelihood discourses (11%)

There is an important presence of ethic dimension in this combination of discourses.

Most of quotes are relating the inequity of payment received from the part of the producers and the unfair distribution of profit among the food chain. Both short-circuit and cooperatives of producers are therefore perceived as manners to re-equilibrate negotiation power of small producers. In another hand, consumers have a more positive vision of quality from products coming from local markets than from establishments' part of the dominant model. Also, they perceived that the complexity of GFSC could be

harmful for their health as there are more risks due to the long chain of distribution. Finally, the specialization of agricultural activities is breaking the ecosystems' patterns.

Perceptions of performance

From the economic performance point of view, LFSC is presented as a way to re-equilibrate economic power of small farmers against large companies. In fact, alternative models of production and commercialization are interesting to increase farmers' profit.
The poor communication on costs of production between large and small enterprises and between producers and consumers is mentioned as a lack of social performance from the part of both local and global food chains.

d) Combination Commodity-Right discourses (9%)

This combination represents more than 50% of the quotes classified under the Right discourse.

Quotes related the point of view of consumers mentioning that they are even more price sensitive since the beginning of the actual economic crisis and relating that the difference between their purchase power is increasing. Public sphere also accords importance to the right to information, mentioning that consumers have very low access to knowledge according to what is considered healthy food in a first part, and in a second part, information about where is used the amount of money of their purchases. Once again, the disequilibrium created by GFSC model is reported.

Perceptions of performance

In resume, global food system is seen negatively as it creates economic disequilibrium. In addition, purchase power of consumers differs a lot depending of socio-economic situations and do not enable many of them to get access to the product they really want. Consumers are finally highly sensitive to prices.

e) Combination Right-Livelihood discourses (8%)

Again, this combination represents the other part of quotes classified under the Right discourse. There is an important representation of the social dimension.

Institutional organizations seem to have an important role to play regarding the promotion of agricultural activities: public purchases appear as central for the development of alternative models of production and commercialization, via hospitals, scholar cafeterias, etc.; governments have to assure a certain economic activity in the regions for its occupation. In another hand, help's payments and subsidies from the CAP

are mentioned as unfairly distributed among the farmers. Finally, local markets and short-circuits are panel for knowledge exchange, education and participation for everyone.

Perceptions of performance

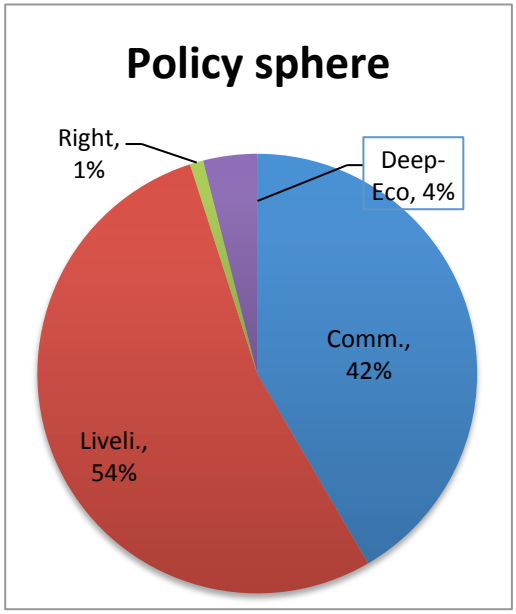
From both right-livelihood discourses' point of view, local food models of production represent an interesting avenue to assure certain economic activities in rural regions. However, the economic performance of small farmers in relation to the governmental help received in form of subsidies is perceived as unfairly distribute, which can bully the security of their activities.

Regarding the social performance, there is a positive perception of alternatives models of production and commercialization like basis to exchange knowledge, to educate consumers and encourage the participation of everyone into the food system.

Figure 6. Policy sphere analysis of discourses

3- Policy sphere

Policy sphere focus on economic, social and environmental dimensions, reflecting the main political concerns.



a) Commodity discourse (42%)

82% of quotes are related to the economic dimension.

When policy sphere refers to commodity discourse, it reports the importance of the agricultural sector for Spanish economy in general and for its agro-alimentary industry; the growth in terms of activities and income in Catalonia; the increase of productivity of the sector in the past few years; the great position of Catalonia regarding the gross value created per employees and finally, the almost null unemployment rate of Catalan agrarian sector.

In another part, policy sphere also mentioned the strategic geographical localization of Catalonia to get access to an important basin of consumers that are mostly Catalan and Spanish ones. Lack of innovation is also underlined as well as the strategy of differentiation of products from the part of the industry. Finally, it seems like food security is a future objective for Catalan agro-industry to increase competitiveness in the sector.

Perceptions of performance

Politic sphere has a great perception of GFSC sector in relation to their high level of productivity, their important contribution to the national economy and their high rate of employment. In addition, there is a notable influence of the size of the farm on its competitive capacity. This fact suggests that policy sphere perhaps tends to orientate farms into the dominant model of production or encourage producers' grouping. Finally, food security appears as a political strategy to increase competitiveness of the sector.

b) Livelihood discourse (54%)

Livelihood discourse includes principally the economic (38%), social (32%) and environmental (21%) dimensions.

Livelihood discourse is concern with issues related to territorial planning, protection of environment (Natura 2000) and mainly about promotion and local consumption and sustainable practices. From a first point of view, there is a need for revitalizing rural regions by encouraging local economy. Land pressure from urban extension is increasing the cost of opportunity for farmers. Also, it is notable that the number of farms tends to diminish while the their size tends to increase; in fact, biggest farms are the most competitive.

From another point of view, policy sphere is encouraging the emergence of local and alternative models of consumption by promoting the healthy character of local and fresh food. Certifications of quality and of origin are manners to promote such models as well as encouraging local economic activity. Through such a promotion, innovation from the part of farmers is encouraged as well as ferias treating on agriculture.

Finally, short-circuit model and human capital development (formations, workshops, etc.) are encouraged as a way to increase quality of life of farmers and their final profit. This last is mentioned lot of time in the quotes.

Perceptions of performance

Policy sphere perceives the certification of quality of product and the designation of origin as a manner to increase farmers' profit. From the social performance vision, LFSC model could reduce the exodus of people from rural zones to city centers by encouraging the development of local economy. As well, through formations and workshops, alternative models create opportunities to increase quality of life of producers. In the same line of thoughts, public policies also encourage and support sustainable practices put in application by farmers.

c) Combination Commodity-Livelihood discourses (18%)

The combination of discourses represents about 20% of the quotes classified under both commodity and the livelihood discourses.

As one of the objectives of the policy sphere is to encourage and support farmers into their agricultural activities, strategies of certification of products and direct sales are encouraged to help them in this sense. Certification helps to stabilize prices to consumers at the same time as assuring a traceability of the product. In addition, association of farmers into cooperatives assures a better organization of the market, nevertheless the poor participation of the industry in this sector. Finally, certification of proximity promotes participation of producers into those associations.

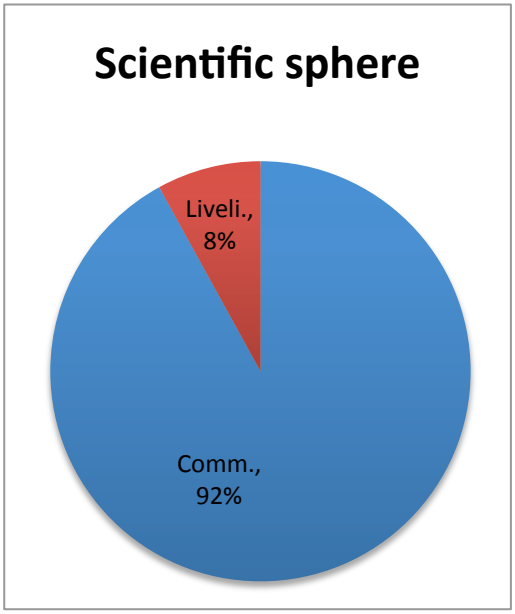
Perceptions of performance

Economic performance in terms of final profit of local food chain's actors seems improved when farmers participate into associations and cooperatives. Certifications of agriculture of proximity also encourage farmers to implicate into cooperatives for a better organization of the market.

Figure 7. Scientific sphere analysis of discourses

4- Scientific sphere

Scientific sphere is mostly centered in economic and environmental dimensions in proportions of 55 and 34% respectively. This tendency from the part of the scientific sphere to adopt the commodity discourse seems normal, as the majority of the subventions for research and development are coming from private or public sectors. Concerns related to agricultural sector are more often than others taken under the wings of private sector; for instance, preoccupations to increase productivity of land, pest resiliency, climate change, etc.



a) Commodity discourse (92%)

The majority of quotes with reference to commodity discourse concern the economic dimension (59%) and the environmental one at 32%. In addition, lot of citations makes reference to the economic understanding of the environmental dimension.

Scientific sphere appears to be very preoccupied by the energetic unbalanced created by agricultural activities. The quantity of energy used versus the quantity of energy delivered by food products is

deficient. This fact could be measure in terms of artificial land, importation of fertilizers, transport of raw materials, etc. More than everything, scientific sphere refers to the dependency of fossil fuel from the part of the agricultural sector and the necessity to import it. Ecological footprint of Catalan agriculture is therefore negative. It seems important to underline the fact that most of quotes in relation to the unbalanced use of energy are classifier under the commodity discourse because they are linking those issues under an economic point of view.

In addition, commodity discourse treats on the importance of innovative capacity as a creator of value; it could measure in relation to the GDP or the employment rate for instance.

Perceptions of performance

In respect to the economic performance, scientific sphere relates the dependency of enterprises to fossil fuel importation, as well as other raw materials such as fertilizers. This essential need of reliance to others international markets do not optimize the economic performance of the global food system. In opposition, organic agriculture, part of LFSC model, seems less dependent of importations as they use less fossil fuel for the same productive activities. This fact of art makes them therefore less vulnerable, which is positive when it refers to economic performance. In general, both local and global food supply chains have a negative ecological footprint and an unbalanced use of energy for agricultural activities.

b) Combination Commodity-Livelihood discourses (8%)

It makes reference that organic agriculture, as well as farms producing their own biofuel, are less energetic demanding and then more economic and environmental efficient.

Next Table 18 presents a resume of all perceptions of performance from the different spheres, according to their discourses. Those resumes are the main ideas removed from the sets of quotes classified under a specific combination of variables. Starting from those main ideas, it provides an explanation and gives a sense to those perceptions under the point of view of food chain performance.

Table 18. Spheres' perceptions of performance according to economic, social and environmental aspects

Spheres & Discourses	Perceptions of performance Types of performance (Economic, Social or ENvironmental)	
Market - Commodity	E	GFSC model presents a higher level of economic performance in terms of opportunities than local food chain. The high competition of firms assures this high level of performance.
Market - Livelihood	E	Cooperatives of producers (LFSC) are perceived as increasing economic performance of farmers by creating more value.
	E	Enterprises of the dominant model are seen as more efficient to get access to the market and to adopt new technologies (innovation).
Market - Commodity / Livelihood	E	LFSC seems a way to increase economic performance of producers.
Public - Commodity	E	Firms' part of GFSC are perceived as very efficient in terms of optimization of use of resources, what implicate the exchange of products on global markets. In contrary, it is perceived negatively concerning food sovereignty challenge.
	E	LFSC could support better farmers to be autonomous and self-secure in relation to the economic point of view. Alternative models can assure equity payments to producers.
	S	There is a low decisional capacity of consumers and producers part of the GFSC.
	En	GFSC is seen negatively respecting environmental performance.
	En	LFSC is perceived positively from the public sphere as they have a lower ecological footprint.
Public - Livelihood	S	Positive perceptions of LFSC because it creates direct links between consumers and producers.
	S	Local food is perceived as healthy and promotes good consumption habits.
	S	LFSC models can increase quality of life of producers.
	En	GFSC is producer of important quantity o greenhouse gas emissions.

	En	LFSC is supporting and even based on sustainable practices.
Public - Commodity / Livelihood	E	Alternative models can re-equilibrate power between small and large enterprises by increasing farmers' profit.
	S	There is poor communication of costs of production from both local and global chains.
Public - Right / Commodity	E	GFSC creates economic disequilibrium.
	S	Poor information for consumers on products and on the justification of the price of products.
Public - Right / Livelihood	E	LFSC is seen as a manner to develop economic activities in rural areas.
	E	Public policies have an important role to play to assure the fair payments to producers and enlarge their opportunities.
	S	LFSC is perceived as a platform to exchange knowledge and educate consumers.
Policy - Commodity	E	GFSC has an important contribution for national economy (employment, income generated, etc.)
	E	Large farms have a higher competitive capacity; policy sphere may intend to group farms in cooperatives or to support the dominant model.
	S	Food security appears as a strategy to increase sectorial competition.
Policy - Livelihood	E	Certifications of quality and designation of origin permit to increase farmers' profit.
	S	By supporting local economy, agriculture of proximity helps reducing people's exodus.
	S	LFSC model increases quality of life of producers.
	En	Public policies encourage sustainable practices.
Policy - Commodity / Livelihood	E	Cooperatives of farmers increase their final profit and enable a better organization of the market.
Scientific - Commodity	E	Total dependency on importations of fossil fuel, fertilizers, etc. from both local and global food chains.
	E	Models defended by LFSC, such as organic production, seem less dependent of fossil fuel importations as they use less.
	En	Negative ecological footprint and use of energy in agricultural activities.

Through the general analysis of the 210 quotes found with Atlas.ti software, it is possible to affirm that the three aspects of food chain performance perceptions are represented. In a first time, perception of economic performance of global food supply chain is seen positively from the point of view of the market sphere, when it is treating of the commodity discourse. The explanation is based on competition effects on prices to consumers, on economy of scales for enterprises, on control of large market and more. However, when the livelihood discourse is coming up, impacts of GFSC model on economic performance aspect, are negatively perceived, due to the inclusion of others actors of the food chain that do not delight of the same struggle power than the large market. The inequity of power of farmers or small enterprises is mentioned various times and through different combinations of discourses and dimensions (economic, social and ethic). From this point of view, economic performance is also tightly linked with the social aspect of performance perception, as unbalanced power can threat life styles of people and the continuity of the enterprise; in this case agricultural and livestock activities. Models promoted by LFSC appear therefore as part of the solution to re-equilibrate power and opportunities between smaller and larger enterprises (economic performance). As well, the perception of LFSC is positive in a way that it promotes social performance by supporting quality of life of producers. This last has been explicitly mentioned several times under various combinations of categories. As well, alternative models of production and commercialization permit to reconnect consumers with producers where an exchange of ideas, visions and knowledge is possible. Finally, social and economic aspects of performance perceptions are pretty linked one with the other as spheres are referring to both of them is a series of same contexts.

In a second time, environmental performance has also been related few times, most of quotes linked to the local food supply chain. Livelihood and commodity discourses seem central in this argumentation. Once again, alternative models of commercialization and production are defended as favouring a greater positive perception of environment; as a way to better respond to the actual and future challenges facing environmental dimension.

Finally, global food supply chain perceptions seem most of the time harmful under the point of view of the livelihood discourse. The dominant model is described as creator of disequilibrium from the point of view of the consumers and producers. In contrary, LFSC appears as a means of promoting fair and equilibrated relations between actors of the food chain. There is therefore a general impression that alternative models can better served the majority of interests for a majority of people, taking in account the analyzed aspects of performance.

This last part of the results and discussion consists in the translation of the attributes analyzed earlier in section 6.1 -*Specific analyses of families of codes and codes*- into measurable indicators, easier to applied directly in real life situations.

6.4 Translate Attributes into Indicators

To complete the analysis of perspectives of performance of local and global food supply chains, it seems interesting to suggest some measurable indicators, coming from the translation of codes and attributes. In order to more easily calculate the social, economic and environmental perspectives of performance, indicators are based on the definitions of attributes, themselves serving as basis of comparison of perceptions of local and global food supply chains. Furthermore, those indicators can be adapted to different scenarios, as most of them are easy to find in the literature. Table 19 presents a proposition of the possible indicators to evaluate food system performance perspectives.

Table 19. Proposition of indicators for food systems

Family of codes	Codes	Attributes	Indicators
Market	Cost	Cost of production	Cost of production (in €/ha)
	Price	Purchase price	Purchase price (in €/Kg)
	Profit - Distribution of profit	Benefits	Profit (in €) Share of added value (in €). In each step of the food chain
	Access to market		Market share (in %) Total volume of sales (euros) Numbers of establishments Concentration of enterprises (index of Gini)
	Negotiation power		Market share (in %) Share of value added (in %)
	Market share		Market shares (%)
Quality	Quality	Quality of products	Public acceptance (qualitative) Durability of the product (time of freshness) Nutritive value (content of nutrients)
		Quality of life	Average salary Saturation of work
		Certification of quality	Numbers of different certification of quality of products
	Health		Obesity rate of the population & childhood obesity rate Content of pesticides in products (in %) Quantity of pesticides applied (in Kg/ha) Diseases related to food consumption (diabetes, cholesterol, cardiac, etc.)
	Food Safety		Numbers of intoxication per year Share of intoxication with aliments from global and local supply chain Presence of biotic and abiotic factors that may cause human diseases Levels of saprophytic microorganisms

Sustaina-ble practices	Environment	Pollution	Soil pollution (Quantity of chemical fertilizers in Kg/ha) Use of water (in liters and lt/ha) Quantity of recycled waste of large firms (in tons) Agrochemicals inputs (in Kgs/ha)
		Friendly practices	Index of biodiversity (in farms within global and local food chains) Proportion of organic production in a determined territory (in %)
	Ecological footprint		Food miles of aliments Energy consumption to produce aliments (in kW/ha) Tones of CO2 emitted (Tons/ha)
	Energetic balance		Energy consumption (in kW and kW/ha) Consumption of fossil fuels (in kW)
Public policies	National programmes	Support to farmers	Average distance to main roads Access to communication technologies (rate workers/number of computers)
	International policies	Common Agricultural Policy	Amount of money destined to farmers (in €)
	Food sovereignty		Rate of produced and consumed aliments (%)
	Food security		Share of food for humans in imported food (%) Commercial balance Importations (%)
Innovation	Innovation	Innovation of products	Numbers of patents
		Social innovation	Agro-food ferias & numbers of conferences on agro-food industry
Territory	Empowerment of the local		Employment (number of jobs) Index of diversification of economic activities
	Association		Numbers of Cooperatives Numbers of groups of consumers
	Participation		Numbers of local markets
	Creation of value	Macro-Economics	GDP per capita Share of GDP of agro-industry Numbers of new small enterprises
		Micro-Economics	Rate of land owning (%) Concentration of land owning (Index of Gini)
		Value added	Share of added value of eco-tourism related to food chains

All those indicators are coming from evidences of the literature that can be easily applied to the actual context of Catalan food chain performance assessment. There are various possibilities to analyze specific sector of the food chain; those indicators appear thus as a suggestion from the results found through this document.

7. Conclusions

From the analysis of local and global food supply chains, four major discourses have emerged as representing the main ideas and visions of the four spheres, representing all actors participating in the different models of Catalan food chains. As seen in the document, the commodity discourse, mostly focusing on an economic vision of food product, is clearly the most represented through the quotes, following by the livelihood discourse, which takes in account a larger perspective of food production. However, it is possible to remark that there is a poor representation of the discourse deep ecology, as it seems quite difficult to judge from documents and reports, such an intrinsic sentiment of belongings to the Earth from the society. It is definitely not a topic often mentioned in research and this fact could explain partly the reason of its poor presence. Perhaps the definition of this discourse should be revised, may be more oriented through alternatives, new innovations and environmental friendly developments in the society. In the same line of thoughts, the discourse on right appears as quite absent of the literature, as his natural orientation through the right to access to food, the right of culturally adapted food (etc.) are not real actual concerns of Catalan population. The discourse on right is still justified as it represents an essential part to consider when it is time to analyze food systems. However, an orientation through the right to access to information on food products from the part of the consumers, to traceability of aliments, to fair reparation of profits among the food chains, seem more justified at the time to interpret population concerns in the literature. As the right discourse was always linked with the commodity or livelihood discourses, it could be interesting to adapt the discourse to the present socio-economic and political context of Catalonia.

Concerning the second part on the research, that is to say, to capture the perceptions of social, economic and environmental performance of local and global food supply chains, there are two opposite points of view, depending of the spheres that are implicated. From the purely commodity discourse point of view, competition between large firms is seen positively as it increases its economic performance in terms of negotiation power, its possibilities to realize economy of scales, have a higher control on the market and on the final prices of consumers. In contrary, when the livelihood discourse is present with the commodity one, perceptions of economic performance of global food chain are seen more negatively. Impacts of the great power of large firms struggle the quality of life of producers by not providing them sufficient revenue for their work. This inequity in the relations is mentioned various times through several combinations between spheres and discourses. From this fact, alternative models of production and commercialization are seen as positive from the economic performance aspect, as they permit to re-equilibrate the opportunities of small farmers by providing them higher standards of life. Most of results associate with perceptions of economic performance are also pretty linked to the social aspect of the performance, as life style is also part of social performance. In relation to the environmental performance, local food chain is seen as having a positive repercussion as the defended model is less harmful in terms

of environmental externalities. In addition, most of spheres have the perception that agriculture of proximity is getting involved in sustainable practices, desired from the part of the society and the policy sphere.

In a third part, the analysis of families of codes has also conducted to interesting conclusions for the adoption of tendency regarding new political programme of rural development. The *Market* family makes most of the references to the un-equity relations of power between farmers and large firms, regarding the un-fair payments they received for their work. The dominant model is therefore seen as a harmful factor in terms of opportunities of small farmers to live from agricultural activities; issue presents in both the commodity and livelihood discourses. Results from the family of codes *Quality* report that there is a higher perception of quality -in terms of quality of life, quality of products and quality of environment- linked to the alternative models of production such as agriculture of proximity. In addition, the family *Sustainable practices* relates that short-circuits and organic production have better perceptions in relation to their impacts on the environment. In contrary, concerns about ecological footprint and transport impacts of products from the global market, are perceived negatively from the population. *Public policies*, jointly with the family *Territory*, confirm the importance of the role of the politic sphere to promote rural development and furnish support to small and alternative production.

Finally, the transformation of the attributes found across the literature into measurable indicators permits to furnish a higher appreciation of the work, as it gives the tool for feasible application in real life situation. The indicators mentioned above are only a suggestion and for sure, will need to be adapted to the purpose of the next research on the topic. Moreover, the study has plenty recognized the complexity of interactions and dynamism of visions regarding food systems, all influenced by the changing role one plays into the system. For ultimate, the present paper dares to furnish sufficient reflections entering in accordance to the new Common Agricultural Policy, that underlines the importance of re-equilibrating food chains power and increases its competitiveness through the promotion of direct farmers-consumers relations, as well as supporting producers' organizations (GenCat, 2013c). Those last objectives are all other possible solutions that have been confirmed in the present study.

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Appendix 1

Selected texts used for Atlas.ti analysis:

1- Market sphere:
   a. Toribio J.J. & al., 2012. La Cadena Agroalimentaria en España. Asociación de Grandes Empresas de Distribución. Anual Report. 129 pages.
   b. Ministerio de Agricultura Pesca y Alimentación, 2008. La distribución agroalimentaria y transformaciones estratégicas en la cadena de valor. General Direction of Agro-Alimentary Industry, Madrid, Spain. 394 pages.

2- Public sphere:
   a. Ferran Garcia-VSF, 2013. Compra pública en sistemas alimentarios locales, Impactos sociales, ambientales y económicos. VSF- Justicia Alimentaria Global. 68 pages.
   b. Ecolosfera, 2010. Kilómetro "0", la alimentación sostenible. Slow Food España 2010-2011. http://ecolosfera.com/slow-food-alimentacion-sostenible/ (retrieved August 2013).

3- Policy sphere:
   a. Generalitat de Catalunya, 2008. Programa de Desarrollo Rural de Catalunya: Período de programación 2007-2013. Administración General del Estado. 520 pages.
   b. Generalitat de Catalunya, 2013a. Decret 24/2013 sobre l'acreditació de la venda de proximitat. Departament d'Agricultura, Ramaderia, Pesca, Alimentacio I Medi Rural. 28 pages.

4- Scientific sphere:
   a. Alarcón S. & Sánchez M., 2013. Business strategies, profitability and efficiency of production. Spanish Journal of Agricultural Research 2013 11(1), 19-31.
   b. Amate J.I. & de Molina M.G., 2013. "Sustainable the-growth" in agriculture and food: an agro-ecological perspective on Spain's agri-food system (year 2000). Journal of Cleaner Production 38 (2013) 27-35.

Appendix 2

Added texts used for Alceste analysis:

1- Policy sphere:
   a. Comisión Nacional de la Competencia (CNC), 2011. Informe sobre la relaciones entre fabricantes y distribuidores en el sector alimentario. 164 pages.

2- Market sphere:
   a. Roche Cruz I., 2002. El impacto del supermercado sobre el comercio urbano de proximidad. ASEDAS. 78 pages.
   b. Comisión Nacional de la Competencia (CNC), 2011. Informe sobre la relaciones entre fabricantes y distribuidores en el sector alimentario. 164 pages.

3- Public sphere
   a. Fadon B.J. & López García D., 2010. Manual 7: Como vender directamente nuestras producciones ecológicas. "Canales alternativos para la comercialización de los alimentos ecológicos en mercados locales".

4- Scientific sphere
   a. Di Masso Tarditti M, 2011. Las fronteras de una alimentación alternativa: explorando los límites del movimiento alternativo transformador en Cataluña. Universidad Autónoma de Barcelona (ICTA y ARAGUAB). Congreso Español de Sociología de la Alimentación 14-15 de junio 2011. 20 pages.
   b. Gil Roig J.M., 2004. La industria agroalimentaria en Cataluña: localización, estructura financiera y estrategias empresariales de innovación y exportación. CREDA-UPC-IRDA. Parc Mediterrani de la Tecnologia. Campus el Baix Llobregat. 49 pages.

Appendix 3

Table 20. Format of enterprises of the agro-industrial sector present in different Autonomous Communities and Spain (2010)

Empresas Conserveras en España registradas por Comunidad Autónoma 2010							
Tamaño (numero de empleados) / **Localidad**	Andalucía	Murcia	Comunitat Valenciana	Extremadura	Cataluña	Otras	Total Empresas
Grande 200 o mas	**5**	**9**	**5**	**1**	**3**	**12**	**35**
Mediana B 100 - 199	6	9	4	4	2	**18**	**43**
Mediana A 50 - 99	12	22	12	4	5	**34**	**89**
Pequeña 10 - 49	69	46	40	23	22	**132**	**332**
Micro 0 - 9	252	83	91	90	70	**332**	**918**
Total Empresas	**344**	**169**	**152**	**122**	**102**	**528**	**1417**
Suma Acumulada	344	513	665	787	889	1417	
Porcentaje	24%	12%	11%	9%	7%	37%	
Porcentaje Acumulado	24%	36%	47%	56%	63%	100%	

*Fuente: Elaborado en base a las clasificación 103 (CNAE 2009) del DIRCE (INE, **2010**).*

(Corona Treviño L. & al., 2011)

Appendix 4

Table 21. Positioning statements of the eight most important agro-alimentary commercial groups in Catalonia

Positioning Statement	Surface (m²)		# establishments (unity)		Sales Volume (M. of euros)		
Comercial Groups	Rank	MS* (%)	Rank	MS (%)	Rank	MS (%)-2010 (Catalonia)	MS (%)-2011 (Spain)**
CARREFOUR	**1**	16	**1**	12	**2**	16.9	19.8
EROSKI	**2**	14	**3**	7	**3**	13.0	10.8
MERCADONA	**3**	11	5	4	**1**	18.2	20.2
CONDIS	4	8	**2**	8	5	6.5	n/d
CONSUM	6	4	6	3	6	4.2	2.2
BON PREU	5	8	6	3	4	6.7	n/d
LIDL	8	4	7	2	7	4.0	3.0
MIQUEL ALIMENTATION	7	4	4	7	8	3.7	n/d
* MS: Market share						(Generalitat de Catalunya, 2011)	
						**(Expansion.com, 2011)	

Appendix 5

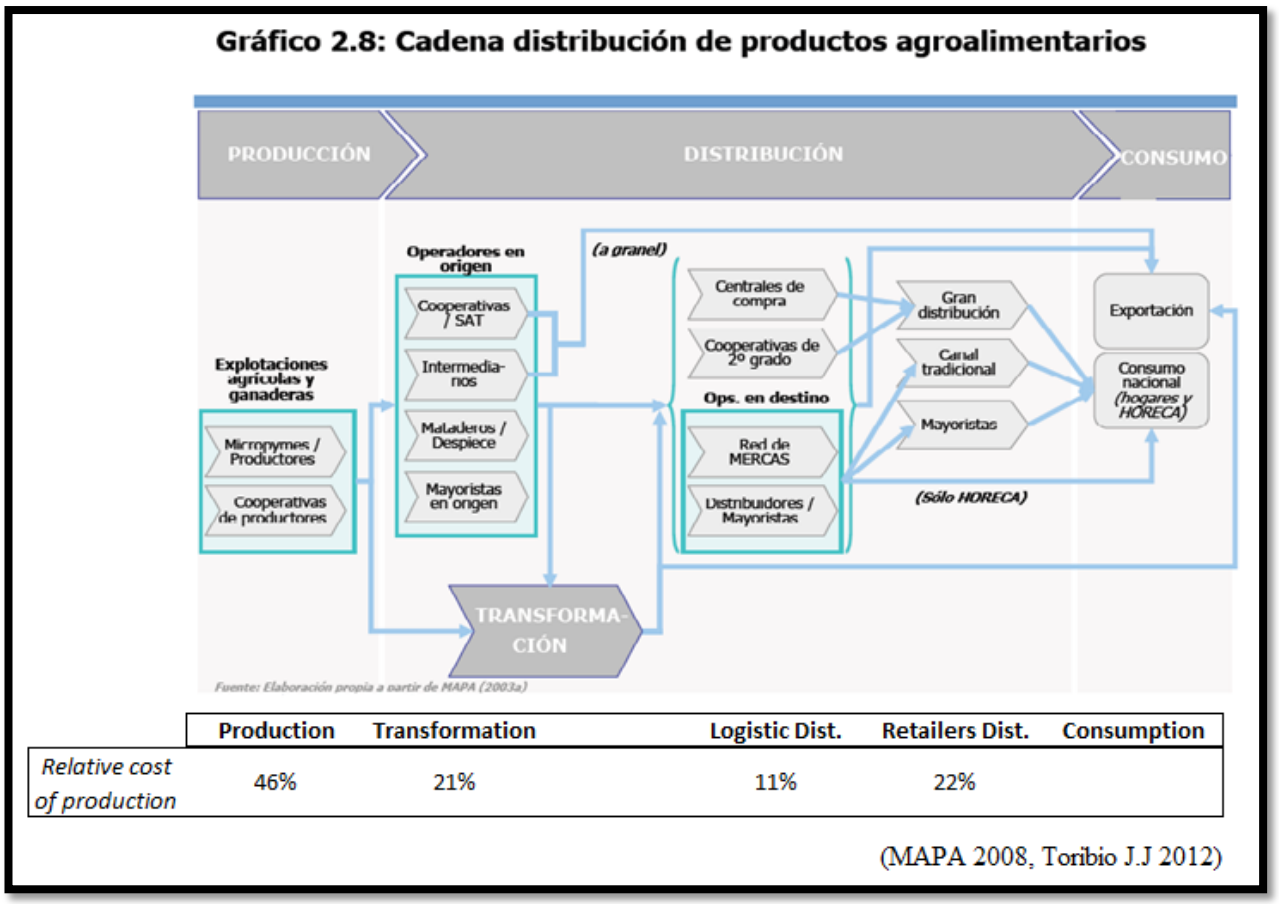
Table 22. Distributor's brands participation of total sales from the most important Spanish commercial groups, 2010.

Empresa de distribución	% marca de distribuidor sobre ventas	Ejemplos de marca de distribuidor
Aldi Supermercados, SA	95,0%	Aldi, Aldi Actual (sólo artículos de forma temporal)
Lidl Supermercados, SA	80,0%	Solevita, Bellaroom, Freeway, La Caldera, etc.
DIA, SA	50,0%	DIA
Mercadona, SA	38,0%	Hacendado
Grupo Eroski	30,0%	Eroski, Eroski Natur, Eroski Seleqtia
CC Carrefour, SA	25,0%	Carrefour, Carrefour Discount
Alimerka (Grupo)	23,0%	Alimerka
Covirán, SCA	22,0%	Covirán
Grupo El Arbol, SA	22,0%	Super, Super Premium, Super Basics, etc.
Dinosol Supermercados, SL	20,0%	Supersol
Miquel Alimentació Grup, SA	20,0%	Gourmet
Auchan (Grupo)	18,0%	Auchan
Condis Supermercats, SA	18,0%	Condis
Bon Preu, SA	17,0%	Bonpreu
Unide Sociedad Cooperativa	17,0%	UNIDE
El Corte Inglés (Grupo)	16,0%	ECI, Hipercor y Aliada.
Consum Sociedad Cooperativa	14,0%	Consum

(CNC, 2011)

Appendix 6

Figure 8. Global food chain distribution in Spain



	Production	Transformation	Logistic Dist.	Retailers Dist.	Consumption
Relative cost of production	46%	21%	11%	22%	

(MAPA 2008, Toribio J.J 2012)

1- Production

Among the stakeholders involved in the global food system, Spanish and Catalan producers seem to most unprepared to respond quickly to challenges and take advantage of new opportunities. Concerns about their competitive capability, their propensity to risk and their negotiation power emerge on the first plan. A general tendency is denoted among farmers to regroup in professional organization or cooperatives, especially in Mediterranean regions like Catalonia. By increasing their amount of products and stabilizing their offer in time, producers can hope to have a greater negotiation power with the big firms and stabilize consumer prices (MAPA 2008).

2- Transformation

i) Cooperatives / SAT

Agricultural society of transformation (SAT) or cooperatives of transformation are association of farm workers or stakeholders partners that have economic duty regarding those partners. Their main purpose is to maximize the returns to the partners through the activity of transformation (Asesoria Buenavista S.L. 2012).

ii) Intermediaries

They are offering series of essential functions for the producers like transport, storage, selection of variety, adjusting the offer to the demand, finance, informative system, added services, etc. (Aulafacil, 2013).

3- Logistic distribution

i) Purchasing centers

They take form as an association that aims to regroup important quantities of different distributors' purchases (concentration of higher volume) to take advantage of a stronger negotiation power against suppliers. The purchase of huge quantities allows reducing the prices (Aulafacil, 2013). In addition, purchasing centers are offering various services in accordance to sale's management: storage of products, stock management, transport or advices, etc. (MAPA 2008). Those centers can be independent or part of commercial groups, just like the group Eroski that have its own purchasing center (Salcedo B.L., 2012). In Spain, purchasing centers are gaining in importance against the suppliers and Mercas group with the augmentation of super and hyper-markets (Toribio J.J 2012). They detain around 50% of market shares for fresh products (MAPA 2008).

ii) Second grade cooperatives

They permit to reach consumers through new commercialization process by a more important volume of sale and then, a higher negotiation power. This vertical organization has a growing tendency since couple of years (MAPA 2008). For example the cooperative ACTEL, located in Lleida (Catalonia), is one of the most powerful in Spain regarding to cereals and fruits and vegetables production (Grup ACTEL, 2013).

iii) MERCAS group

This is the major Spanish distributor with its 23 centers and involving about 3650 enterprises. The organization relies on integrated suppliers that funnel around 75% of fruits and vegetables products and 20% of consumed meat in Spain. A strong competition between suppliers explains the diminution of the numbers of operators and the increment of the surface. MERCAS group is also working directly with cooperative of farmers, even if this part represents a very small percentage of its activity (MAPA 2008).

iv) Suppliers - Distributors

Suppliers – Distributors are grouping the offer to distribute it at better prices to others suppliers or retailers. As they assume the risk of transport and storage, suppliers-distributors are defined as facilitators for the manufacturers because they give them precious information of the most demanded product, as well as given the better prices to retailers because they acquire products in such a big quantity. Finally, they can be part or independent of a commercial group (Salcedo B. L., 2012).

4- Retailers distribution

i) Big Distribution

Big distribution is referring to an organized food distribution where products are delivered in numbers of markets and shops (super and hyper markets, self-service markets, etc.). At this step, retailers have the role to moderate purchase prices and to offer complementary services to consumers (Toribio J.J. 2012).

ii) Traditional Chain

Traditional chains are involving most of the time retailers located in urban centers and characterized by a low integration (MAPA 2008). Most of fresh products like fruits and vegetables (46%) are distributed through the traditional chain, passing firstly by second-degree cooperatives or suppliers and then arriving to the purchasing centers (Toribio J.J. 2012).

iii) Suppliers

Most of those suppliers are offering food products for exportation, as wholesalers (Salcedo B. L., 2012).

Appendix 7

Table 23. Discourses and dimensions' analysis per spheres of reference

Spheres	Discourses		Total	Dimensions				
				Economic	Social	Environ.	Ethic	Health
Market	Commodity	Num of obs.	44,5	42,2	1,7	0,3	0,3	0,0
		%	81%	95%	4%	1%	1%	0%
	Livelihood	Num of obs.	8,5	5,3	2,8	0,0	0,3	0,0
		%	15%	63%	33%	0%	4%	0%
	Right	Num of obs.	2,0	1,0	1,0	0,0	0,0	0,0
		%	4%	50%	50%	0%	0%	0%
	Deep-eco	Num of obs.	0,0	0,0	0,0	0,0	0,0	0,0
		%	0%	0%	0%	0%	0%	0%
	Subtotal	Num of obs.	55,0	48,5	5,5	0,3	0,7	0,0
		%	100%	88%	10%	1%	1%	0%
Public	Commodity	Num of obs.	34,8	25,3	2,1	3,0	2,1	2,4
		%	54%	73%	6%	9%	6%	7%
	Livelihood	Num of obs.	22,8	5,2	5,1	2,2	6,7	3,3
		%	36%	23%	22%	9%	30%	15%
	Right	Num of obs.	5,5	2,1	1,9	0,3	1,0	0,2
		%	9%	39%	34%	5%	19%	3%
	Deep-eco	Num of obs.	0,8	0,3	0,0	0,6	0,0	0,0
		%	1%	30%	0%	70%	0%	0%
	Subtotal	Num of obs.	64,0	32,9	9,0	6,4	9,9	5,9
		%	100%	51%	14%	10%	15%	9%
Policy	Commodity	Num of obs.	23,7	19,5	3,0	1,0	0,2	0,0
		%	42%	82%	13%	4%	1%	0%
	Livelihood	Num of obs.	30,7	11,7	9,7	6,4	1,8	1,0
		%	54%	38%	32%	21%	6%	3%
	Right	Num of obs.	0,7	0,1	0,1	0,3	0,1	0,0
		%	1%	17%	17%	50%	17%	0%
	Deep-eco	Num of obs.	2,0	0,0	0,0	2,0	0,0	0,0
		%	4%	0%	0%	100%	0%	0%
	Subtotal	Num of obs.	57,0	31,3	12,8	9,7	2,2	1,0
		%	100%	55%	23%	17%	4%	2%
Scientific	Commodity	Num of obs.	30,5	17,8	2,3	10,2	0,5	0,2
		%	92%	58%	8%	33%	2%	1%
	Livelihood	Num of obs.	2,5	0,3	0,8	1,2	0,0	0,2
		%	8%	13%	33%	47%	0%	7%
	Right	Num of obs.	0,0	0,0	0,0	0,0	0,0	0,0
		%	0%	0%	0%	0%	0%	0%
	Deep-Eco	Num of obs.	0,0	0,0	0,0	0,0	0,0	0,0
		%	0%	0%	0%	0%	0%	0%
	Subtotal	Num of obs.	33,0	18,2	2,7	11,3	0,5	0,3
		%	100%	55%	8%	34%	2%	1%
Total		Num of obs.	210,0	130,9	30,0	27,7	13,2	7,2
		%	100%	62%	14%	13%	6%	3%

(Self-elaboration, 2013)

Appendix 8

Table 24. Classification of quotes – Analysis from Atlas.ti

(In an annex document)

Appendix 8

Table 24. Classification of quotes – Analysis from Atlas.ti

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Cost	Cost of production	MAPA, 2008	Market	Cost of production is relative to the productivity of the industry.	Commodity	Economic
Cost	Cost of production	MAPA, 2008	Market	Logistic costs are an important part of purchase price.	Commodity	Economic
Price	Price	Toribio, 2012	Market	Purchase prices absorb most of costs of transaction, storage and process of transformation.	Commodity	Economic
Price	Price	Toribio, 2012	Market	Competition and concentration of actors (monopolism) inflate prices.	Commodity	Economic
Price	Price	Toribio, 2012	Market	Stabilization of price helps for consumers' fidelity (realized from the part of the retailers).	Commodity	Economic
Price	Price	Toribio, 2012	Market	Integrated enterprises can offer lower prices.	Commodity	Economic
Price	Price	MAPA, 2008	Market	All actors influence the final price or by limiting it (competition), or by stabilizing it (retailers)	Commodity	Economic
Price	Price	MAPA, 2008	Market	Very good relation price/quality of Spanish products destined to exportation.	Commodity	Economic
Price	Price	MAPA, 2008	Market	Competition diminishes prices to consumers.	Commodity	Economic
Profit/Dist of profit	Dist. of profit	Toribio, 2012	Market	Unequal division of profit from the farm level to the table.	Commodity	Economic
Profit/Dist of profit	Cost	MAPA, 2008	Market	Producers' total expenditures increase significantly each year.	Commodity	Economic
Profit/Dist of profit	Profit	MAPA, 2008	Market	Cooperatives of producers appear to help them to have a higher final benefice.	Commodity, Livelihood	Economic
Access to market	Atomization	MAPA, 2008	Market	Agro-alimentary industry presents a high degree of atomization of its enterprises.	Commodity	Economic

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Access to market	Access to market	MAPA, 2008	Market	Atomization of agro-industrial sector limits the access to market, to inputs, credit, logistic, and more.	Commodity	Economic
Access to market	Profit	MAPA, 2008	Market	Commercial balance is negative.	Commodity	Economic
Access to market	Access to market	MAPA, 2008	Market	Because most of agriculture is located in rural zones, farmers have a low access to services, transport, formation, information, etc., so it is more difficult to reach consumers as well.	Livelihood	Social, Economic
Access to market	Access to market	MAPA, 2008	Market	The very high concentration of large firms enables them to lead the demand and orientate the primary production - fully access to market then and less liberty for the others	Commodity	Economic
Access to market	Access to market	MAPA, 2008	Market	Higher is the concentration; higher is the benefice - direct access to market.	Commodity	Economic
Access to market	Access to market	MAPA, 2008	Market	The high concentration generates significant difficulties in relation to market access.	Commodity	Economic
Access to market	Access to market	MAPA, 2008	Market	Cooperatives of producers have difficulties to sell their products to Mercas.	Commodity	Economic
Access to market	Access to market	MAPA, 2008	Market	Low consideration of small farms as real enterprises. There is a low orientation of small farms through the market.	Livelihood	Economic
Access to market	Access to market	MAPA, 2008	Market	Non-stability of the offer (in terms of quantity, time, quality, diversity, etc.). It makes more difficult the access to the market.	Commodity	Economic
Access to market	Access to market	MAPA, 2008	Market	Various factors limit the access to the market of Spanish products: weak brand development, difficult access for transport, logistic distribution, poor infrastructures, etc.	Commodity	Economic
Access to market	Access to market	Toribio, 2012	Market	Major size and integrated companies enable higher flexibility and access to market.	Commodity	Economic
Access to market	Access to market	Toribio, 2012	Market	Small producers have more difficulties to get access to the market because of lack of technologies, low efficiency, and poor marketing.	Commodity, Livelihood	Economic
Negotiation power	Negotiation power	MAPA, 2008	Market	The productive part seems the less prepare and organize to respond to consumer demands, what place it in a disadvantage position.	Commodity, Livelihood	Economic

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Negotiation power	Negotiation power	MAPA, 2008	Market	As the producers are the one that creates more value, their poor negotiation power seems an important problematic.	Livelihood, Commodity	Ethic, Economic, Social
Negotiation power	Negotiation power	MAPA, 2008	Market	Higher is the concentration of firms; bigger is the negotiation power.	Commodity	Economic
Negotiation power	Negotiation power	MAPA, 2008	Market	Second grade cooperatives (horizontal and vertical integration) appear to increase the negotiation power of small farmers.	Commodity, Livelihood	Economic
Negotiation power	Negotiation power	MAPA, 2008	Market	The concentration of firms (Mercas) is increasing the competition and enforcing their negotiation power.	Commodity	Economic
Negotiation power	Negotiation power	MAPA, 2008	Market	There is a poor access for farmers' cooperatives into the red of Mercas due to their poor negotiation power.	Commodity	Economic
Negotiation power	Negotiation power	MAPA, 2008	Market	The atomization of the agro-industrial sector reduces its negotiation power.	Commodity	Economic
Negotiation power	Negotiation power	MAPA, 2008	Market	The concentration is that strong that it permits to firms to control the demand and they have then a strong advantage in relation to the negotiation.	Commodity	Economic
Negotiation power	Negotiation power	MAPA, 2008	Market	Poor negotiation power from the part of groups and cooperatives of producers - excessive payment periods and tightening supply conditions.	Commodity	Economic
Negotiation power	Negotiation power	MAPA, 2008	Market	Poor negotiation power from the part of groups of producers against the commercial distribution.	Commodity	Economic
Negotiation power	Negotiation power	MAPA, 2008	Market	Short circuits do not create such disequilibrium in the food chain such like the long chain.	Livelihood, Commodity	Ethic, Economic, Social
Market share	Market share	MAPA, 2008	Market	Concentration of large firms increases directly the competition between those.	Commodity	Economic
Market share	Market share	MAPA, 2008	Market	Second grade cooperatives have a very low market participation in the Mercas network but the majority of their sale pass through the big distribution.	Commodity, Livelihood	Economic
Quality	Market share	MAPA, 2008	Market	Exportations are based on the good relation price-quality	Commodity	Economic

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Quality	Trust/information	MAPA, 2008	Market	Valuation of product quality from the part of the consumers	Commodity	Economic
Quality	Traceability	MAPA, 2008	Market	Quality of products has to be constant.	Commodity	Economic
Quality	Traceability	MAPA, 2008	Market	Quality of services and traceability of products are primordial in agro-alimentary industry.	Commodity	Economic
Quality	Healthiness	MAPA, 2008	Market	Quality of product is one of the basic criteria when it is time to choose a place to buy food product	Commodity	Social
Quality	Healthiness	Toribio, 2012	Market	Integrated producers can offer higher standards quality of products	Commodity	Economic
Public policies	Public policy	MAPA, 2008	Market	The Lisbon Strategy, the expansion of the European Union, the reform of the CAP are all affecting particularly the agro-food industry.	Commodity	Economic, Environment, Social
Food security	Food security	MAPA, 2008	Market	It seems that there is a change regarding the orientation of agricultural policies - more linked to food security	Rights	Social, Economic
Food security	Food security	MAPA, 2008	Market	There is an increase preoccupation regarding food security.	Rights	Social, Economic
Innovation	Innovation	Toribio, 2012	Market	There is a need for more innovation in the production and distribution chain.	Commodity	Economic
Innovation	Innovation	Toribio, 2012	Market	The low efficiency of small producers, their lack of innovation and their tight orientation through the market harm their competitive position.	Commodity, Livelihood	Economic
Innovation	Innovation	MAPA, 2008	Market	There is a lack of innovative mentality for many of producers - lack of vision, of entrepreneurial initiatives.	Commodity	Economic
Innovation	Adaptability	MAPA, 2008	Market	There are some difficulties to adapt to new technologies and/or incorporate them.	Commodity, Livelihood	Economic
Innovation	Adaptability	MAPA, 2008	Market	It seems almost impossible for farmers to assume the investments related to innovation, formation of employees, information of the market, etc.	Commodity	Economic
Territory	Access to services	MAPA, 2008	Market	Rural exodus for city centers - lack of infrastructure, services- Occupation of the territory	Livelihood	Social

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Territory	Rural development	MAPA, 2008	Market	The aging population and the exodus of young make many farmers thinking about the abandon of the activity.	Livelihood	Social
Territory	Contribution to GDP	Toribio, 2012	Market	Cooperatives of producers and Society of Transformation are creating lots of value.	Livelihood	Economic
Territory	Productivity	MAPA, 2008	Market	Agro alimentary industries have a lower productivity rate in general because they are conditioning by various external factors (cost of primary resources, incorporation of new technologies, etc.)	Commodity	Economic
Cost	Cost of production	GenCat, 2008	Policy	High cost of opportunity for farmers linked to land pressure.	Livelihood	Economic
Cost	Cost of production	GenCat, 2013	Policy	Reduce the cost of transport.	Commodity	Economic
Cost	Cost of production	GenCat, 2013	Policy	Reduce cost of transaction, storage and marketing.	Commodity	Economic
Price	Price	GenCat, 2008	Policy	Certifications (IGP, DOP, etc.) help to stabilize prices what help the producers.	Livelihood, Commodity	Economic, Social, Ethic, Environmental
Profit/Dist of profit	Profit	GenCat, 2013	Policy	It is an objective to increase producers' profit margins.	Commodity, Livelihood	Economic
Profit/Dist of profit	Profit	GenCat, 2013	Policy	Direct sale is a way to increase the profitability of farms.	Commodity, Livelihood	Economic
Profit/Dist of profit	Profit	GenCat, 2013	Policy	Diversification and products with value added are strategies to increase producers' profit.	Livelihood	Economic
Profit/Dist of profit	Profit	GenCat, 2008	Policy	The development of human capital through formations and workshops could encourage competition and so, incomes of the farm.	Livelihood	Economic
Access to market	Access to market	GenCat, 2008	Policy	The geographical localization of Catalonia permits it to have a large access to different market.	Commodity	Economic
Access to market	Access to market	GenCat, 2008	Policy	Catalonia agro-alimentary sector has a great position in the Spanish economy (in terms of contribution to PIB, employment). Then it has a great access to Spanish market.	Commodity	Economic

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Market share	Market share	GenCat, 2008	Policy	Catalan agro-alimentary industries intend their products mostly to Catalonia (42%) and Spain (41%), while 17% is for exportations.	Commodity	Economic
Market share	Market share	GenCat, 2008	Policy	Catalonia is first in Spain in terms of total sale of agro-alimentary products.	Commodity	Economic
Quality	Trust/information	GenCat, 2013	Policy	Promote certification of origin and quality certification of Catalan products as a governmental strategy to encourage local consumption and economy.	Livelihood	Economic, Social, Environment
Quality	Healthiness	GenCat, 2013	Policy	Promote the quality of fresh, local, artisanal, sustainable production' practices products.	Livelihood	Social, Environmental, Economic, Ethic
Quality	Healthiness	GenCat, 2008	Policy	Quality of product is used as a differentiation strategy.	Commodity	Economic
Quality	Quality of life	GenCat, 2008	Policy	Short-circuit model can help improving life quality of farmers and rural economy	Livelihood	Social, Economic, Environment, Ethic
Quality	Healthiness	GenCat, 2008	Policy	Certification of quality of products (IGP, DOP, etc.)	Livelihood	Social, Economic, Environment, Ethic
Quality	Healthiness	GenCat, 2008	Policy	There are 13 quality certifications in Catalonia (IGP and DOP).	Livelihood	Social, Economic, Environment, Ethic
Quality	Trust/information	GenCat, 2008	Policy	Catalonia is a pioneer community in quality product certification (letter Q) and traditional product certification (Iberia ham)	Livelihood, Commodity	Economic, Social
Quality	Traceability	GenCat, 2008	Policy	Important and constant increase in the certified quality product in Catalonia with a guarantee related to the elaboration process and the traceability.	Livelihood, Commodity	Economic, Social
Quality	Quality of life	GenCat, 2008	Policy	Higher life standards for farmers can have an impact on the competitiveness and increase the income of farmers	Livelihood	Economic, Social

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Food safety	Food safety	GenCat, 2013	Policy	Support for the producers to improve the conditions in which they transform and process food products - more implication from the part of the producer.	Livelihood	Economic, Social, Ethic
Health	Healthiness	GenCat, 2013	Policy	Sensitize consumers to eat healthy, fresh and local food products.	Livelihood	Health
Sustainable practices	Environmental impact	GenCat, 2013	Policy	To promote concept of proximity and sustainability	Livelihood	Environment
Sustainable practices	Environmental impact	GenCat, 2008	Policy	One the main objective is to promote sustainable practices via local variety, better management of resources and organic agriculture	Livelihood	Environment
Sustainable practices	Water pollution	GenCat, 2008	Policy	Water resources abusement and deterioration of living coasts and rivers	Deep ecology	Environment
Sustainable practices	Biodiversity	GenCat, 2008	Policy	Natura 2000 assure the protection of environmental conditions and biodiversity as well as managing human activities inside those protected areas.	Livelihood	Environment, Social
Sustainable practices	Soil erosion	GenCat, 2008	Policy	Soil capacity has to be respected to limit the risk of erosion	Deep ecology	Environment
Sustainable practices	Water pollution	GenCat, 2008	Policy	Swine industry is a significant factor of water contamination by nitrates	Commodity, Livelihood, Rights	Environment
Sustainable practices	Soil Pollution	GenCat, 2008	Policy	Organic and integrated agriculture appear as solutions to limit soil contamination	Livelihood	Environment
Sustainable practices	Soil Pollution	GenCat, 2008	Policy	The application of fertilizers, livestock manure and agrochemicals can be considered as the main sources of soil contamination	Commodity, Livelihood	Environment
Public policies	Public policy	GenCat, 2013	Policy	It is an example of public policy that encourage the emergence of short-circuit and local consumption	Livelihood	Social
Food security	Food security	GenCat, 2008	Policy	Food security is an objective in the future for the Catalan agro-industry - It is part of the major challenge of increasing competition in the sector.	Commodity	Economic
Innovation	**Innovation**	GenCat, 2013	Policy	Through this public policy, the innovation capacity of producers is encouraged for the development of new processes of production and transformation.	Livelihood	Economic, Social

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Innovation	Innovation	GenCat, 2008	Policy	There is lack of industrial innovation in the overall Catalan agricultural sector.	Commodity	Economic
Innovation	Innovation	GenCat, 2008	Policy	There are more than 200 exhibitions per year in Catalonia related to agricultural sector - This is a proof of their sense of innovation.	Livelihood	Social, Economic
Innovation	Trust/information	GenCat, 2008	Policy	Catalonia has been one of the pioneer communities to create quality certification and designation of origin for its products.	Livelihood	Social, Economic, Environment, Ethic
Territory	Contribution to GDP	GenCat, 2008	Policy	Essentially rural regions have a higher PIB grade than essentially urban areas.	Livelihood	Social, Economic
Territory	Access to land	GenCat, 2008	Policy	Most of producers own their land but renting lands have increase in the last years, the same as the augmentation of mercantile landowner.	Commodity, Livelihood, Right	Socio-Economical, Ethic
Territory	Land distribution	GenCat, 2008	Policy	Continuous diminution of exploited farms in Catalonia and increase of the size of those that are still exploited.	Livelihood	Social, Economic
Territory	Access to land	GenCat, 2008	Policy	Most of farms that are still exploited are the biggest one in terms of land owning; there is a higher rate of abandon of smaller farms.	Livelihood	Economic
Territory	Land distribution	GenCat, 2008	Policy	The increase of farm area has increased the competitive capacity.	Commodity	Economic
Territory	Contribution to GDP	GenCat, 2008	Policy	17% of employees are working in the agro-alimentary Catalan industry that detains 18% of Spanish PIB.	Commodity, Livelihood	Social, Economic
Territory	Cultural respect	GenCat, 2008	Policy	The different festivities around the agro-food sector permit to exchange knowledge and experiences between producers.	Livelihood	Social
Territory	Rural development	GenCat, 2008	Policy	There are socio-political actions to revitalize the rural regions where people have tendency to move to city centers - occupation of the territory, valorisation of rural regions through economic activities, the patrimony, the environment, etc.	Livelihood	Socio-Economic, Environment
Territory	Urbanization	GenCat, 2008	Policy	There is a high land pressure causing by the urban expansion.	Livelihood	Social, Economic

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Territory	Association	GenCat, 2008	Policy	Augmentation of farmers' participation into cooperatives of producers (fruits and vegetables) for a better common organization of market.	Livelihood, Commodity	Social, Economic
Territory	Participation	GenCat, 2008	Policy	There is a poor participation of industries into sectorial associations of Public Administration to realize common beneficial actions.	Livelihood, Commodity	Social
Territory	Participation	GenCat, 2013	Policy	Certifications of proximity encourage the association between producers who can then concentrate the offer.	Livelihood, Commodity	Social, Economic
Territory	Contribution to GDP	GenCat, 2008	Policy	Poor profitability of the forestry sector in Catalonia comparing to the surface (61%). Higher economic performance of livestock (58%) and crop production (39%) of the total agricultural production.	Commodity	Economic
Territory	Contribution to GDP	GenCat, 2008	Policy	Important growth of Catalan agricultural sector in the last years in terms of activities and total income.	Commodity	Economic, Social
Territory	Contribution to GDP	GenCat, 2008	Policy	The agrarian sector productivity is higher than other sectors but still under the national average mainly due to unspecialized employees.	Commodity	Economic
Territory	Contribution to GDP	GenCat, 2008	Policy	Agro-alimentary industries are 50% over the Catalan average rate of productivity.	Commodity	Economic
Territory	Contribution to GDP	GenCat, 2008	Policy	Catalonia is in the middle of Spanish regions regarding the gross value added per employees.	Commodity	Economic
Territory	Contribution to GDP	GenCat, 2008	Policy	The agrarian sector productivity has increase quicker from 1986 to 2002 than the rest of the Catalan economy.	Commodity	Economic
Territory	Contribution to GDP	GenCat, 2008	Policy	Catalan agriculture occupies an important place in the Spanish agro-alimentary industry.	Commodity	Economic
Territory	Employment	GenCat, 2008	Policy	Unemployment rate in the Catalan agrarian sector is almost null.	Commodity	Social, Economic
Cost	Cost of production	VSF, 2013	Public	Cost of production -Minimization from the part of the enterprise.	Livelihood	Economic
Cost	Cost of production	VSF, 2013	Public	Costs of production are to high to enable a fair payment to producers.	Livelihood	Ethic

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Cost	Cost of production	VSF, 2013	Public	Purchase prices of products do not reflect cost of production.	Commodity	Economic
Cost	Cost of production	VSF, 2013	Public	Poor communication on cost of production.	Livelihood, Commodity	Economic, Social
Cost	Cost of production	VSF, 2013	Public	The cost of production is constantly increasing and is not representative of the final price.	Commodity	Economic
Cost	Cost of production	VSF, 2013	Public	There is an unfair repartition of the benefice within the supply chain - producers are disadvantaged	Commodity, Livelihood	Economic, Ethic
Cost	Cost of production	VSF, 2013	Public	Farmers are completely dependent of payments from the government - they cannot live from product selling.	Commodity	Economic
Cost	Cost of production	Kilometro 0	Public	Transport cost	Commodity	Environment, Economic
Cost	Environmental impact	Kilometro 0	Public	Ecological cost	Livelihood, Deep ecology	Economic, Environment
Price	Price	VSF, 2013	Public	Prices are dictated by large firms and do not represent the cost of production.	Commodity	Economic
Price	Price	VSF, 2013	Public	The CAP has alleged prices to drop and has compensated producers with payments or subsidies to maintain them in activities.	Commodity	Economic
Price	Affordability	VSF, 2013	Public	Consumers are even more price sensitive with the economic crisis - offers appear as a good marketing strategy used by supermarkets.	Commodity, Right	Economic, Social
Price	Price	VSF, 2013	Public	There is a disequilibrium between purchase power of consumers.	Commodity, Right	Economic, Social, Ethic
Price	Price	VSF, 2013	Public	Very poor information for the consumer in relation to where the money of its purchase is going.	Commodity, Right	Economic, Ethic
Price	Price	VSF, 2013	Public	Difference of 400% between the final and original price of a product.	Commodity	Economic
Price	Price	VSF, 2013	Public	Big distribution is the main leader in price fixing.	Commodity	Economic

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Price	Price	VSF, 2013	Public	Consumers' awareness about what are the implications of buying at the lower price as possible.	Commodity	Economic, Social, Ethic, Environmental, Health
Profit/Dist of profit	Dist. of profit	VSF, 2013	Public	Farmers do not receive a fair part of the final price for their production.	Commodity, Livelihood	Economic
Profit/Dist of profit	Dist. of profit	VSF, 2013	Public	Unfair distribution of profit among the food chain (farmers are losers).	Commodity	Economic
Profit/Dist of profit	Profit	VSF, 2013	Public	Increment of the cost of production for farmers - less profit and higher cost of opportunity.	Commodity	Economic
Profit/Dist of profit	Dist. of profit	VSF, 2013	Public	Allocations of payments from the government are not representative and fairly allocated: 84% of farmers share 25% of payments.	Commodity	Economic
Access to market	Access to market	VSF, 2013	Public	Negative commercial balance.	Commodity	Economic
Access to market	Access to market	VSF, 2013	Public	Restoration sector is submitted to the same dominant model - small producer, local products have difficulties to get up through the restaurants.	Commodity	Economic
Access to market	Negotiation power	VSF, 2013	Public	6 first enterprises of agro-alimentary sector have a gain equal to the entire Ministry of Agriculture - high concentration and control of prices.	Commodity	Economic
Access to market	Access to market	VSF, 2013	Public	The actual globalization of the processes of production, transformation and distribution force the firms to look for access to resources and access to market at a global scale.	Commodity	Economic
Negotiation power	Negotiation power	VSF, 2013	Public	Food alternative networks are base on the re-socialization producers-consumers, what could re-equilibrate a little the power against the dominant chain.	Livelihood	Social, Economic, Environment
Negotiation power	Negotiation power	VSF, 2013	Public	The one who’s controlling the resources to produce and distribute food is the one who has gained the power.	Commodity	Economic

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Negotiation power	Negotiation power	VSF, 2013	Public	There is an important disequilibrium created by the global food market.	Right, Commodity	Social, Economic, Ethic, Environment
Negotiation power	Negotiation power	VSF, 2013	Public	There is a disempowerment from the productive and consumer's parts. All the power is now concentrated in the distribution that decides of the aliments, varieties, prices, origins, etc.	Commodity	Economic, Ethic, Social
Negotiation power	Negotiation power	VSF, 2013	Public	Farmers have a low negotiation power against the large firms.	Commodity	Economic, Ethic
Negotiation power	Negotiation power	VSF, 2013	Public	When producers are regrouping into cooperatives or associations, it appears that they increase their negotiation power.	Commodity, Livelihood	Economic, Ethic
Market share	Market share	Kilometro 0	Public	There is an invasion of exotic products.	Commodity	Economic
Quality	Quality of life	VSF, 2013	Public	Short-circuits permit to increase life quality of farmers	Livelihood	Economic, Social, Ethic
Quality	Trust/information	VSF, 2013	Public	Local markets enable direct contact between producers where they exchange knowledge and experiences	Livelihood	Social
Quality	Trust/information	VSF, 2013	Public	Short-circuit model permits to re-equilibrate power within the food chain - exchanging information on cost for instance	Livelihood, Commodity	Economic, Ethic
Quality	Healthiness	VSF, 2013	Public	Consumers have the perception that buying products from local market is a higher guarantee of quality of products, what can have a positive influence on their health	Commodity, Livelihood	Health, Economic
Quality	Trust/information	VSF, 2013	Public	Short-circuit model is a way to transfer information on product quality to consumers.	Livelihood	Social
Quality	Trust/information	VSF, 2013	Public	Designation of quality is valorised by consumers - attractive	Commodity	Economic
Quality	Environmental impact	Kilometro 0	Public	Quality of food products is linked to the region is coming from, its low footprint, the seasonal availability, the sustainable conditions of production, etc.	Livelihood	Environment, Social, Ethic

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Food safety	Food safety	VSF, 2013	Public	Consumers' misperceptions about the fact that products from the industrial food chain model are safer (innocuous) than the one coming from small farmers, artisanal production, etc.	Commodity	Health
Food safety	Food safety	VSF, 2013	Public	Longer and more complex is the food chain; higher risk may have in relation to health. Higher flexibility of localized model against large firms.	Livelihood, Commodity	Health
Health	Healthiness	Kilometro 0	Public	Local food products are synonyms of health.	Livelihood	Health
Health	Healthiness	VSF, 2013	Public	Longer and complex is the food chain, higher risk may have in relation to health	Livelihood	Health
Health	Healthiness	VSF, 2013	Public	Promotion of good consumption habits for the health: local and seasonal products.	Livelihood	Health, Social, Economic
Health	Healthiness	VSF, 2013	Public	Eating healthy pass mainly through food quality in terms of functional and fortified aliments	Commodity, Right	Health, Social, Economic
Sustainable practices	Environmental impact	VSF, 2013	Public	Public policies have a central role to play for the promotion of sustainable practices	Livelihood	Environment
Sustainable practices	Participation	VSF, 2013	Public	From the technical point of view, it is perfectly possible to incorporate more and more criteria of proximity, organic food, short-circuit in the every day life.	Livelihood	Social, Environmental, Ethic
Sustainable practices	Energy consumption	VSF, 2013	Public	Global market creates environmental disequilibrium - distance of transport, dependency to fossil fuel.	Commodity	Environment
Sustainable practices	Environmental impact	VSF, 2013	Public	The fragmentation and specialization of food system have lead to a breaking of ecosystem cycles	Commodity, Livelihood, Deep ecology	Environment
Sustainable practices	Environmental impact	VSF, 2013	Public	Public purchases can be central in the switch through a more ethic and sustainable model of production	Livelihood	Environment, Ethic
Sustainable practices	Soil erosion	VSF, 2013	Public	Very important loose of organic material in the soil	Livelihood	Environment
Sustainable practices	Impact on climate change	VSF, 2013	Public	Agro-alimentary industry generates an important quantity of greenhouse gas emissions	Livelihood	Environment

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Sustainable practices	Energy consumption	Kilometro 0	Public	Consumption of local products help to diminish ecological footprint and the transport of aliments	Commodity	Environment, Economic, Social
Public policies	Quality of life	VSF, 2013	Public	Public purchase of local food should be part of a general plan (a public policy) for its promotion into scholar cafeterias, hospitals, alimentary banks, etc.	Right	Social, Economic
Public policies	Quality of life	VSF, 2013	Public	It seems important to help assuring the occupation of the territory (rural regions) and a certain economic activity.	Right, Livelihood	Economic, Social, Environment
Public policies	Distribution of profit	VSF, 2013	Public	The CAP appears to be unfairly allocated between the producers	Right, Livelihood	Economic
Public policies	Public policy	VSF, 2013	Public	Developing a public policy that firstly takes in account the agricultural activity itself (prices and operations) and secondly, the impacts on the society and on the environment.	Livelihood	Economic, Social, Environment, Ethic
Food sovereignty	Food sovereignty	VSF, 2013	Public	The fragmentation of over-specialization of the actual food system have lead to a lost of power which can be interpreted like a diminution of the national food sovereignty.	Commodity, Rights	Economic, Social
Food sovereignty	Food sovereignty	VSF, 2013	Public	The great majority of imported products are destined to animal's feeding - completely dependent of external commerce and price fluctuations	Commodity	Economic
Food sovereignty	Food sovereignty	VSF, 2013	Public	Low autonomy in terms of production of beans for human alimentation.	Commodity	Economic
Innovation	Innovation	VSF, 2013	Public	There is a constant need for innovation -new products, attractive, presentation, out of temporal, etc.	Commodity	Economic
Territory	Participation	VSF, 2013	Public	Local markets have a higher capacity for the promotion of knowledge space, education on food system that then enable to take more autonomous and responsible decisions.	Livelihood, Right	Social, Ethic
Territory	Participation	VSF, 2013	Public	Short-circuits enable people, civil citizens to participate into the food system and then, to democratize it	Right, Livelihood	Ethic, Social

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Cost	Cost of production	Amate, 2013	Scientific	Energy cost (most is relative to transport)	Commodity	Environment
Cost	Cost of production	Amate, 2013	Scientific	Cost of production is increasing and there is a lower benefice for the producer.	Livelihood	Economic
Price	Price	Amate, 2013	Scientific	Final prices reflect amount of resources and energy used, as well as environmental externalities.	Livelihood	Economic, Environmental
Profit/Dist of profit	Profit	Alarcón-S.	Scientific	Companies have to take care of the link profitability-efficiency to be performant.	Commodity	Economic
Profit/Dist of profit	Profit	Alarcón-S.	Scientific	Agro-food industry in general is an important economic sector of profitability.	Commodity	Economic
Access to market	Food security	Amate, 2013	Scientific	Dependence on importation.	Commodity	Economic
Access to market	Food security	Alarcón-S.	Scientific	Dependence on importation.	Commodity	Economic
Access to market	Access to market	Alarcón-S.	Scientific	Offering a more satisfactory offer than the competitors is essential to get access to the market.	Commodity	Social, Economic
Health	Healthiness	Amate, 2013	Scientific	The abandon of Mediterranean diet is responsible for about 40% of population overweight	Commodity, Right	Health, Social, Economic
Sustainable practices	Environmental impact	Amate, 2013	Scientific	Spanish ecological footprint is in deficit of 2.4M of ha of agricultural surface - use od virtual land	Commodity	Environment, Ethic
Sustainable practices	Environmental impact	Amate, 2013	Scientific	Scientifics affirm that western lifestyle is damaging the entire planet	Commodity	Environment
Sustainable practices	Energy consumption	Amate, 2013	Scientific	Spain has a big deficit in terms of amount of energy used - strongly dependent of primary energy importation.	Commodity	Environment, Economic
Sustainable practices	Energy consumption	Amate, 2013	Scientific	The important amount used of Nitrogen require important quality of energy to process it - impacts of the environment	Commodity	Environment, Economic
Sustainable practices	Soil Pollution	Amate, 2013	Scientific	The use of great quantity of plastic and carbon derivation is highly contaminant and environmentally expensive.	Commodity	Environment, Economic
Sustainable practices	Energy consumption	Amate, 2013	Scientific	Organic agriculture is seen a model that can permits to reduce the energetic demand and the impact on environment	Livelihood	Environment

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Sustainable practices	Environmental impact	Amate, 2013	Scientific	Propositions of solution such as the production of biofuel on the farm, irrigation water uptake, etc. - reduction of ecological footprint	Livelihood, Commodity	Environment, Economic, Social
Sustainable practices	Impact on climate change	Amate, 2013	Scientific	Organic farming reduces greenhouse gas emission comparing to the conventional model when units or land quantifies it.	Livelihood, Deep ecology	Environment
Sustainable practices	Energy consumption	Amate, 2013	Scientific	Organic farming consumers less fossil fuel to produce the same product	Livelihood, Deep ecology	Environment
Energy	Energy consumption	Amate, 2013	Scientific	For each unit of energy available in the form of food, 6 units of energy have been consumed in its production, distribution, transportation and preparation	Commodity	Environment
Energy	Energy consumption	Amate, 2013	Scientific	Transport is the more energy demanding of the food system	Commodity	Environment
Energy	Energy consumption	Amate, 2013	Scientific	The industrialization is the main cause of this energetic unbalance	Commodity	Environment
Energy	Energy consumption	Amate, 2013	Scientific	Total dependency of external input - fossil fuel	Commodity	Environment, Economic
Energy	Energy consumption	Amate, 2013	Scientific	The 3 most energetic demanding agricultural inputs are fuel, nitrogen fertilization and animal feed.	Commodity	Environment, Economic
Energy	Energy consumption	Amate, 2013	Scientific	The primary energy used in agriculture (fossil fuel) is non renewable	Commodity	Environment
Energy	Energy consumption	Amate, 2013	Scientific	The use of fertilizers, treatments, animal feed is highly energetic demanding	Commodity	Environment, Economic
Energy	Energy consumption	Amate, 2013	Scientific	The dependency to fossil fuel, electricity and agrochemicals reduce the efficiency of the actual dominant model of production	Commodity	Economic
Innovation	Innovation	Alarcón-S.	Scientific	Innovation related to market and entrepreneurial orientations.	Commodity	Economic
Innovation	Profit	Alarcón-S.	Scientific	Innovation capacity reveals part of the economic performance of the industry	Commodity	Economic
Innovation	Market share	Alarcón-S.	Scientific	Innovation seems essential for companies to assure a place in the constantly changing market.	Commodity	Economic

Codes	Attributes	Reference	Sphere	Context	Discourses	Dimensions
Innovation	Market share	Alarcón-S.	Scientific	Firms have always to be pro-active in innovation to improve the position in the market.	Commodity	Economic
Territory	Participation	Alarcón-S.	Scientific	Make the hypothesis that true market orientation is realized base on the culture and behaviour of customers.	Commodity, Right	Social
Territory	Employment	Alarcón-S.	Scientific	Agro-food industry is an important for employment creation and for its profitability	Commodity	Social, Economic
Territory	Contribution to GDP	Alarcón-S.	Scientific	The agro industrial sector account for the second largest share in regional GDP.	Commodity	Economic
Energy	Energy consumption	VSF, 2013	Public	About the half of energetic expenditure are related to the use of fertilizers.	Commodity	Environment, Economic

(Self-elaboration, 2013)