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Constraints and Limitations to the Design and Implementation of Origin and Quality Assurance Systems for Argentine Beef

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Abstract

This paper examines the current status of quality beef trade in Argentina together with production and marketing value-adding alternatives. Origin and quality assurance systems for beef have been developed as a way of differentiating products designed to satisfy increasingly demanding European and North American consumers. This led to gaining new markets and obtaining higher prices and profit margins. Such systems are based on institutional, organisational and technological innovations that are ultimately co-innovations, since they derive from generally accepted collective action processes. In Argentina, the strong influence of path dependency, particularly within informal institutional and organisational environments, threatens any possibility of widely applying and developing the new designs, thus turning the argentine livestock sector into an irremediable sector.

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1. Problem Statement

This paper presents three origin and quality assurance case studies that add value to Argentine beef. It also illustrates the main innovations introduced as well as the constraints and limitations that acted against their sustainability and widespread replication. The “multiple case study” method is employed and the economic and strategic aspects of each case are described in the light of the New Institutional Economics.

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The cases in question are “Prinex”, “Carne Angus Certificada” and “Pampas del Salado-COPRODER”. They are examined in the light of institutional, organisational and technological innovations that led to the implementation of competitive strategies. Although such designs improve competitiveness in the livestock and beef sector, they are impossible to replicate massively and are unable to achieve sustainable competitiveness. This paper attempts at explaining the major constraints and limitations responsible for this.

Origin and quality assurance systems are designed to guarantee food safety and customer satisfaction. Origin may be assured through traceability, that is, following a given food from the field until it reaches the consumer’s plate, while quality is guaranteed by means of various quality systems. Premium products meet specific origin, quality and food safety standards, earning their reputation as quality products, meaning products “capable of satisfying the customer”. Meat thus becomes a specialty protected by a trademark or an Appellation of Origin that helps maintain its position in the market and attain a higher end price.

Beef traceability systems first appeared in developed countries to respond to the customer’s request to know where the animals came from, where they were slaughtered and processed. However, no single cause is responsible for the development of traceability systems. In the past few decades the European food sector had considerable food safety problems (see Jolly et. al., 1989; Sharp & Reilly, 1994; Wandel, 1994; Zimmerman *et. al.*, 1994, Fernández, González, Arruñada, 2001, 2002). One example is BSE in Great Britain in 1996 that killed ten people (The Economist 1998a & 1998b); or cases of meat contamination in Europe by *Campilobacter sp.*, *Escherichia coli*, *Listeria monocytogenes* and *Salmonella sp* (see Licking & Carey, 1999; Schaffner *et. al.*, 1998.; Sharp & Reilly, 1994; Tansey & Worsley, 1995). In 2001 there was an outbreak of foot and mouth disease in the United Kingdom. Although this disease does not affect humans, the epidemics had extensive press coverage and, consequently, consumers became more concerned about the origin of beef (Gallup Organisation UK 2001), and were willing to pay higher prices for products that met standards to assure the origin of animals (Freedom Food Survey, 2001). In the US, on the other hand, traceability was introduced to help promote red meat consumption that had fallen significantly in later years because of *E. coli*. In Argentina, traceability was introduced in response to a request by European and American importers to buy traceable meat and also as a way of exercising government control against sanitary and tax evasion in the country.

2. Objectives

The object of this paper is to demonstrate that under a distorted institutional environment where the rule of law is not fully enforced and where the business culture is informal and lacks clear rules of the game, it is difficult to implement and maintain origin and quality assurance systems. Rather than differentiating themselves through continuous improvement processes and added value, players in the meat chain employ tools that reduce competitiveness of the systems involved and increase transaction costs.

The present study shows that despite the existence in Argentina of new alternatives in the beef market that could be implemented at a profit -as is the case of origin and quality assurance systems-, their application is limited. The Argentine stockbreeding sector appears irremediable, since institutions and organisations involved are reluctant to change or refuse to encourage change.

3. Origin and Quality of Argentine Beef

At the beginning of the 90s livestock amounted to 55 million heads. Beef consumption was approximately 65 kg per inhabitant/year. Today, Argentine livestock is made up of 48 million heads, with an extraction rate of 26%; 24 million cows breed 15 million male and female calves. Every year 12.5 million animals are slaughtered to produce 2,500,000 tons of beef per year. Of the 2,500,000 tons of meat produced, 15% is exported (375,000 t), accounting for 5% of international beef trade. The remaining 85% is marketed locally (2,125,000 t), 70% as half carcass (1,487,500 t) and 30% (637,500 t) as boxed beef¹.

On examining the institutional environment of the beef sector, this paper concludes, among other things, that there is poor compliance with sanitary and tax regulations and that there is a need for government policies to promote meat in domestic as well as in foreign markets. Additionally, the cattle and beef typing system is poor, VAT on meat and agricultural products is inconsistent and there is scarce sanitary and tax control.

The organisational environment, in turn, appears to be considerably disarticulated and atomised, leading to high transaction costs due to inefficiencies detected throughout the transaction process (Otaño, 2002). According to the Association of Argentine Meat Packers (A.I.A.C, 1996) such an atomisation is evidenced by the fact that the largest buyer of cattle in Argentina acquires 4% of all animals slaughtered. Only a few isolated cases show a certain trend towards the creation of strategic alliances, horizontal and vertical co-ordination and, to a lesser extent, vertical or horizontal integration. Besides, there is no foreign capital in the meat packing sector, further proof of the difficulty to carry out transactions in this sector.

¹ Boxed beef is a "basket" of customised chilled cuts. This is a highly efficient system since every cut finds its customer. Only Brazil and Argentina continue marketing half carcasses, thus contributing to the sector's inefficiency, to informal trade and higher prices.

A review of the technological environment shows that the traditional commercialisation system consists of selling “half carcass with bone” (70% of the total traded in the domestic market). It is impossible to add value to the product when marketing a half carcass, since cuts may not be identified and marketing strategies² cannot be implemented. In an attempt to decommo-ditise meat and render the system more efficient, Argentine firms –Angus Certified Meat, Prinex, Quickfood, among others– use boxed beef for better distribution and positioning, mainly in supermarkets –one cut, one customer–. The current system encourages tax evasion and infringes sanitary and environmental regulations (A.I.A.C., 1996).

In summary, the business culture that predominates in Argentina discourages the implementation of origin and quality assurance systems following the difficulty to eradicate sanitary and tax double standards. Víctor Tonelli, CEO of Carnes Hereford S.A., commented that “... there is no consistency between the quality demanded and the quality offered. There are major problems associated with the loading of containers and with poor packaging (boxes). Another issue is temperature variability during boning and the significant difference in temperature from one container to another.” The development of origin and quality assurance systems will not only do away with such double standards but will also render the chain more efficient and, consequently, the price of cuts will be more equitable and will respond to demand.

Following EEC policies, all foods must carry a label specifying their origin, production and manufacturing system, shelf life, nutritional data, etc. For cattle and beef, the label will state whether the animal was fattened entirely on grass, grain or a mixture of both. Most consumers from developed and developing countries prefer meat attributes -juiciness, tenderness, colour- to be consistent in time. Grunert (1996) says that aspects related to the quality of meat are often contradictory, since consumers are looking for leaner meats –with less fat content or “diet” meat– even if fat is what makes meat more tender and juicier. Also, Grunert notes that the butcher is a symbol of quality assurance to consumers.

By means of systems ensuring the product’s origin, once the consumer has tried that product and finds it satisfactory, the consumer expects the same product to continue providing the mentioned attributes and considers that specific food a quality product. Consistent quality –and a certification of origin, feeding and care– encourages consumers to increasingly ask for that type of products even if they are overpriced.

Argentina is only at the initial stage of this environment. Some firms exporting to developed countries have started, in the last ten years, to develop protocols of

² The half carcass generates losses for US\$ 300 million. By-products obtained from the boning of carcass -fat, hide, offal, hoofs, blood, etc.- are wasted. Fighting tax evasion is more difficult when marketing the half carcass and about US\$ 200 million are lost every year from tax evasion due to such a commercialisation system.

fattening, slaughtering, boning, logistics and distribution of their products. The driver for the development of these new systems has been a more demanding consumer. In order to implement these higher added value designs, a payment system to provide incentives and eliminate the half carcass as a commercialisation system should be introduced. "... As a consequence of the widespread phenomenon of evasion in Argentina, the only technological transformation is grass or grain into beef, without coordination among stakeholders, nor hedging."* In view of incentives of formal and informal institutions geared towards a new form of marketing and of assuring origin and quality, the Argentine stockbreeding sector is likely to increase its competitiveness. Such competitiveness must be supported by credible commitments, contracts among all members of the chain, legal certainty and a fair agricultural exporting mindset.

4. Theoretical Framework and Procedure

Three case studies are compared, analysing how they started off and the strategies employed by the entrepreneurs involved, the limitations encountered in developing the business, major innovations that led to a new mode of marketing meat, and the characteristics of the business scenario. The New Institutional Economics provides the conceptual framework. The more frequently used contracts in collective action ventures of this type in search of the common good are described, analysing safeguards, incentives and controls to carry out business.

The study of neo-classical economics attempts at explaining how an economic system works in the light of the following assumptions: an infinite number of buyers and sellers, transparency of transactions, complete contracts, consistent products, complete information, mobile factors, free entry and exit, prices that respond to supply and demand, etc. The neo-classical theory adequately explains the economic system when markets work reasonably well, but fails to do so with missing markets and prices that are no longer the only factor needed to adjust and complete transactions (Hoff et. al.;1993).

According to the New Institutional Economics that developed since Coase (1937, 1960), institutions are partly responsible for transaction costs and play an important role in the development of trade in goods and services. North (1990, 1994) states that when transaction costs are high, institutions are important because they affect production and transaction costs.

The New Institutional Economics focuses on the historical process of institutional change (North, 1990), the economics of property rights (Demzsetz, 1967), and the transaction costs economic theory of the firm (Williamson, 1985). Transaction costs are the *ex-ante* and *ex-post* costs of a transaction. They are the not always visible costs that result from negotiating, planning and carrying out a transaction –*ex-ante*–; and the costs derived from a poor negotiation, contract adjustment and/or

* Héctor Ordóñez. Clarín Rural Engorde a corral Vs. feed lot II. *Un análisis desde los agronegocios.*

contract safeguard –*ex-post*–, due to errors, omissions and/or unexpected modifications (Williamson, 1993). In summary, they are the “costs of operating an economic system” (Arrow and Williamson, 1985).

According to Coase (1998) the lower the transaction costs, the greater the possibilities for specialisation –and the lower the transformation costs– and, consequently, the greater the possibilities for competitiveness in an economic system. Arruñada (1998) states that when the needs to be met are varied, there is an exchange of goods between specialised producers. However, the advantages of specialisation are seldom for free, and difficulties often arise when a player in the system looks for his own interest at the expense of the rest, this is called “opportunism”.

Transaction costs depend, among other things, on the institutions governing a country, system, region or specific sector (North, 1990). Institutions are the rules of the game in a society (North, 1990), country, sector, etc. They are the laws, executive orders, National Constitution, regulations, etc. –formal institutions–; they are also the culture, tradition and habits of the sectors analysed –informal institutions. Williamson (1985, 1993) considers institutions from a “microanalytic point of view” (C. Pinheiro Machado F., 2002) as being “Governance Structures or Institutions” –Market, Hybrids and Hierarchies–, that should be used to identify, explain and mitigate any form of contractual risk.

The neo-classical models fail to explain missing and incomplete markets that result from opportunism and asymmetric information. Only institutional performance can give an idea of economic performance (Kherallah & Kirsten, 2001). Institutions are therefore important when studying an economic system. Institutional environment and institutional change mainly depend on the historical background and on institutional evolution –path dependency– (Ordóñez, 2000).

In the analysis of an economic system, institutional environment and its enforcement are as important as the way in which organisations develop in that environment. Besides, firms that have the function of producing –neo-classical theory– and transacting –neo-institutional theory– require a certain degree of technology to carry out their activities. Organisations buy or produce the goods they need to produce their own goods and/or services, and depend on transaction costs. The firm thus appears as an organisational structure rather than a technological function (Ordóñez, 2000). The cost of the price mechanism, the cost of the market, i.e., the transaction cost, is what leads to the creation of a firm.

When transaction costs are low in an economic system, the better the economic performance of that system. But as North (1990) might say, greater competitiveness due to lower transaction costs is the result of effective institutions with clear rules of the game, full enforcement of the law and high respect for property rights.

North (1990) introduces the notion of time and of historical time in his analysis of institutions and of economic performance. According to him we learn from the past, since the present and the future are a consequence of the continuity of institutions in society. North also introduces the notion of “path dependency” to provide history with the conceptual framework in its predetermination of the present. Path dependency and history are paramount to explain institutional development; not all institutions are efficient, and inefficient institutions may last a long time and condition growth.

As a constraint to change, the criterion of “institutional path dependency” is stronger than that of “organisational path dependency” and “organisational path dependency”, in turn, is more important than “technological path dependency”. This constraint to change is also known as irremediability. North states that when a better alternative may be designed and implemented in a sustainable manner, the system is remediable. Otherwise, the situation is irremediable (North, 1990). CAP and the US Sugar Programme are good examples of this.

Changes in Agribusiness

Drabenstott (1995) mentions two strong processes driving change in agribusiness: a new farmer and a new consumer. The new consumer is extremely demanding both in quantity and quality –quality, consistency and value– while the new farmer benefits from production technology and the management tools needed to carry the food from the field to the consumer’s plate (Kherallah & Kirsten, 2001).

Farmers produce what consumers want to consume. As Boehlje (1996) says, the mindset for commodities to “produce and then sell” is now being replaced by the strategy to “first ask the consumer” and then create the products responding to what the consumer wants. Those farmers make use of organisational and technological innovations to provide consumers what they want, something impossible to achieve via the traditional commercialisation channels (Kherallah & Kirsten, 2001). In answer to a greater concern of consumers about food safety in the past few years, the industry and the public authorities have developed food safety and quality assurance systems (Bredahl, et. al., 2001).

All of these changes in food and agribusiness have led firms to join in strategic alliances –horizontal and vertical coordination–, mergers and/or acquisitions of smaller firms (Kherallah & Kirsten, 2001). Consequently, the spot market is no longer the most effective option to maintain competitiveness and continuous improvement of differentiated products, since it only permits trade through coordinated actions –relational-specific contracts– (Streeter, et. al., 1991) or under vertical integration, where each party emerges as a unit within the governance structure.

When quality depends on a large number of attributes that are difficult or expensive to monitor, the benefit of the transaction is unpredictable and opportunistic actions may lead to moral risk. The solution to such problems is costly since it entails developing governance structures -vertical integration- or involving third parties –lawsuits, the courts. In view of the situation, the quality food sector has designed contracts for obtaining raw materials while it outsources contract enforcement and quality control of the products through external certifying and enforcement agencies.

Incomplete information on quality has serious consequences in the food markets. If quality cannot be identified due to information problems, there will be no overpricing of quality products. According to theory, only the poor quality products remain in the market. Therefore, the amount of information available will have an impact on price and on the quality of that market.

5. The Three Leading Cases: Origin and Quality Assurance Systems

The aforementioned paradigm is only possible through multidimensional co-innovation of institutions, organisations and technology. That would result in clear rules of the game with laws or regulations ensuing origin and quality assurance systems (institutional), contracts among all the participants of the chain (organisational), and the necessary hardware and software to implement those systems (technological). Only then is competitiveness attainable.

Argentina has countless comparative advantages: excellent genetics of bovine herds; most animals are of British origin or a cross of British breeds; vast extensions of land, and 90% of the animals are fattened in the fields. However, there are a few competitive disadvantages: black market, mafias, half carcasses commerce, asymmetric information, laws that are not observed and opportunists. Advantages and disadvantages “compete” against each other, and often disadvantages win, assisted by an ambiguous government with mafia-like bands, the “owners” of the business, as D. North would say.

To be sustainable, origin and quality assurance systems require institutional innovations –laws providing the necessary framework for the creation and dissemination of *boxed beef*–, organisational innovations –a network of farmers/intermediaries/meat packers / wholesalers / retailers / exporters) –, and technological designs or models –the appropriate hardware and software to implement traceability and ensure quality. Such a cluster of innovations will provide the necessary platform to implement origin and quality assurance systems.

The outcome: transparency, added value, lower transaction costs, less opportunists, a single health and taxation standard and specificity of assets. They provide the necessary framework to create genuine competitive advantages. Leading exemplary

cases are Prinex, Carne Angus Certificada (Angus Certified Meat) and Pampas del Salado-COPRODER.

5.1. The “Prinex” Case

Prinex was created at the beginning of the 90’s by a group of Buenos Aires farmers who improved their competitiveness through mutual trust and full compliance with the agreements resulting from vertical and horizontal coordination. They established a network of farmers with credible commitments and a specific and consistent quality of livestock. By following the protocols they were able to build their own competitive edge: the capacity of generating significant volumes of raw materials of the highest quality and climbing the value chain.

Prinex proved to be “... an original strategy of a group of farmers who got together to become partners in off-farm ventures. That is, they climbed up the value chain in order to keep the control of raw materials and add value to them” (L. Piñero Pacheco, Prinex CEO). The Prinex business strategy is a strategy of market differentiation and segmentation using the “Novillo Pampeano” trademark –of known origin and quality–, distributing customised cuts, known as “the 4Cs” (*Cada Corte para Cada Cliente* or “One Cut, One Customer”), and decommoditising beef. It helped Prinex grow the last year, with over 10,000 certified cattle per year.

The institutional innovation that favoured the development of the Prinex case was the opening, by the government, of the Hilton quota for farmers. In 1994 farmers were granted the maximum license through “their own merit”: 120 tons. Thus, they were able to access the European market directly, without intermediaries.

Organisational innovation was the coordination system through agreements referred to the quality of the product and the specific asset: the “Novillo Pampeano” trademark. Vertical coordination means contracts with meat packers to use their idle capacity by processing meat *a façon* (i.e. leasing facilities of an industrial plant with idle capacity), and supermarkets providing cuts in response to specific demand; while horizontal coordination means contracts with farmers in order to gain in scale economy.

Technological innovation meant having the necessary facilities, tools, human resources and software to produce “the 4Cs”, *boxed beef* and to comply with the quality and traceability protocols (defines animal parameters: geographical origin, genetics, breeding, management and feeding, age and weight before slaughter, grading, and slaughtering, boning and delivery procedures).

Through this “multidimensional co-innovation”, Prinex managed to enter the most select market segments (ABC1) of the more developed countries, and obtained higher prices by offering a brand that assured and guaranteed origin and quality, “Novillo Pampeano”.

As from 1994, an average of 120 tons of Hilton quota were allocated every year obtaining, on average, an additional 20% in its final prices compared to the average Hilton selling price. In Spain, Prinex has even sold at over 45% of the price in relation to its Argentine competitors.

Consequently, due to animal traceability, boxed beef, and full compliance with the protocol, "... Prinex is able to sell cap of rump to the best Brazilian customer, tenderloin to Corte Inglés in Spain, and silverside filets to Chile. The highest prices customers are willing to pay for each cut go directly to the farmers. That is why the Prinex motto is: a cut for every customer and the money for the farmer who delivered quality" (Carlos Odriozola, Director of Prinex).

The advantages for the farmer are: safe collection, low transaction costs, overprice – an average 5% more per live kilo as compared to the maximum adjusted price per month, published by the Centre of Cattle Dealers–, ownership of "Novillo Pampeano" trademark (a cultural asset), and access to the most select markets the world over. Meat packers benefit from their own idle capacity. Lastly, the advantage for supermarkets is to offer demanding European customers beef of excellent quality and assured origin.

5.2. The "Carne Angus Certificada" Case

Carne Angus Certificada originated from the confidence of an American organisation (Angus) in setting up its offices in the country to supply the most demanding markets in the world with traceable quality beef.

The prestige of Carne Angus Certificada is due to the fact that the Angus breed is famous for its remarkable fertility and maternal capacity, its fantastic growing capacity, excellent carcass performance and quality of meat. Also, the success of Angus beef in the US led the Argentine Association of Angus to introduce the same Certification Programme of origin and quality in Argentina.

The procedure is as follows: farmers having well defined black or red Angus animals in their farms –up to 25% influence of other breeds is accepted- can register them in the data base of the Argentine Angus Association. Farmers then receive 2 more cents over the price set at the Liniers Livestock Market that day. Later, at the time of slaughter, which takes place only in meat packing plants authorised by the Association –Hughes, Sadowa, Estancias del Sur and Finexcor–, inspectors control slaughtering, boning and packaging procedures to certify the origin and quality of the meat. It must be noted that Angus meat presents an excellent marbling. Once the sacrificed animal has been quartered, the eye-beef area is examined. If it does not have the slight required, the carcass is rejected. Slight is what gives meat its taste and juiciness and contributes to its tenderness.

Institutional innovations derive from taking advantage of both the Argentine and North American cultures that consider the Angus breed as supplier of quality beef, and from the creation and implementation of SENASA³ regulations authorising private agencies to certify food (SENASA Regulation 280/01). The link between SENASA and the AMS (US Agricultural Marketing Service) also helped. The AMS has drawn up the guidelines for the accreditation of agencies acting in foreign countries and certifying beef designed for the American market. SENASA has adopted those guidelines and entered into an agreement whereby the Argentine agency must ensure that the programme is maintained and that it operates according to the approved guidelines. SENASA must also provide the necessary personnel and make information available to AMS staff. Further, under Resolution 278/99 SENASA entrusts the Argentine Angus Association with the responsibility of providing or cooperating in the certification processes.

Organisational innovation refers to the network of associate farmers who benefit from selling their output to Angus Beef, in the certainty that they will be paid promptly and at a premium price. Organisational innovation also refers to the contracts with meat packers that implement food safety systems –SSOP, GMP, HACCP–; contracts of exclusiveness with the Jumbo retail chain in Argentina and with Whole Foods, a North American naturalist retail chain supplying Angus Certified Meat in the US. Angus in the US is synonym of quality beef. In summary, innovation is expressed by a network of networks between farmers, meat packers and retailers vertically and horizontally coordinated to add value, achieve volume and reduce transaction costs.

Regarding technology, innovation implies the ability of meat packers to conduct boning *in situ*, marketing meat as *boxed beef* and selling the cuts in supermarkets on aerobic trays that preserve the red colour of the meat, considered a sign of quality by both Argentine and North American consumers. Another innovation is the “Certification Protocol of Carne Angus Certificada”, from the farm to the end consumer.

As a result of such innovations, a unique competitive edge is achieved and Carne Angus Certificada reaches the most select Argentine and North American consumers –ABC1– and consequently, obtains the highest prices. Being a highly specific asset –owners of the Argentine Angus Association–, only a governance structure such as coordination can be introduced to make all members of the chain share the added value represented by origin and quality.

At present, the Carne Angus Certificada programme has been allocated 114 tons of Hilton quota, having exported 17 tons in the period between January and April

³ SENASA: Servicio Nacional de Sanidad y Calidad Agroalimentaria (National Agricultural Food Health and Quality Service). SENASA is an Argentine sanitary regulatory agency whose main goal is to control and certify products and by-products of animal and plant origin, fertilisers and agrochemical residues. It is also responsible for the prevention, eradication and control of animal disease, including those transmissible to man, and of plant pests affecting crops throughout the country.

2002. Over 300 farmers are participating in the programme, certifying almost 15,000 animals. Evidently, this programme has not yet achieved the volume of sales expected.

4.3. The “Pampas del Salado-COPRODER” Case

Pampas del Salado-COPRODER is an association of farmers in the Province of Buenos Aires who developed an origin and quality assurance protocol to sell their products with different attributes: *GREEN BEEF*⁴, *ECO BEEF*⁵, *GRAIN BEEF*⁶. This is a pilot case, probably the leading case in the country, of a collective development of self-certified farmers.

The original idea advanced by pioneers from the district of Maipú is founded on the fact that the region is a privileged ecological area with great possibilities for open-air natural or ecological production. Farmers in the region may be described as SMEs, with a strong vocation for production and clearly settled in the area. COPRODER constitutes a privileged trustworthy environment for the local government and the Rural Societies. The livestock and beef sector represent an agribusiness culture of SMEs with much potential for expansion, through collective projects related to origin and quality in their widest sense. Lastly, there seem to be “more funds than projects.”

The object of the present project is to strengthen the competitive profile of a select group of agrifood SMEs in the COPRODER region by using geographic origin, ecological uniformity, cultural tradition and quality, as pillars for the construction of competitive advantages. A more ambitious plan is thus presented to consolidate the original proposal: starting with the Pampas del Salado calves, in the Salado Basin, and ending with the Argentine Pampas steer. The current objective is to introduce in the market a critical mass of cattle and beef in a new and attractive manner in order to perform the known market studies for a new product service: beef plus information.

Institutional innovations refer to the drawing up of laws, resolutions and standards to protect property rights and to be able to use a “common name” or Appellation of Origin. Further, the drafting of laws provide the necessary framework for the implementation and sustainability of Appellations of Origin as a means of adding value.

Organisational innovations help consolidate the coordination of collective action vis-à-vis cattle and beef and COPRODER. Such coordination is due to the importance generated by the highly specific asset involved. In this environment a business deal is concluded both strategically and operationally: advertising and training as a

4 *GREEN BEEF*. Grass Feeding.

5 *ECO BEEF*. Ecologic Certification.

6 *GRAIN BEEF*. Grain Feeding.

consortium; training focused on the CPS consortium; creation of a team to promote the CPS Appellation of Origin, by-laws and internal rules and regulations, specific committees to address product, quality, technology and commercial issues, and finally, the development of a quality strategy.

Technological innovations have to do with the formulation of the quality protocol and with boxed beef. It is here where the “know what” and the “know how” are established. Process and product technologies are defined: procedural patterns for processes and products. But, above all, *what* to do and *how* to do it is defined, taking into account customer needs. In this environment, the objectives are to create a quality audit for every company; to define the current mean quality standard per process and per product; to develop a continuous improvement process per product and for every agricultural, industrial and commercial business, and to design quality protocol reference criteria per product.

One representative from each district is member of the COPRODER consortium that will eventually coordinate the network of local registrars. The local committees have set up a unique and remarkable pilot experiment of origin and quality assurance self-certification. For the moment, it is the most important pilot experiment of origin, traceability, and quality assurance self-certification in Argentina and it may become one of the most powerful systems of the livestock business in the world.

6. Conclusions

The three leading cases mentioned show how competitive advantages may be obtained as a result of collective action systems. All have the same common denominator: adding value through quality defined as “the ability to satisfy the customer”. Nowadays, quality also means knowing the origin, i.e. traceability.

Although the cases have been articulated within institutional, organisational and technological environments with varied degrees of success, they run a serious risk of following the informal institutional path dependency of the Argentine livestock and beef sectors.

That particular business culture trades in half carcasses, does not sign contracts to supply quality beef, and fails to promote added value in beef. Such a business culture operates in the black market, ignores standards that ensure safety –GAP, GMP, SSOP and HACCP, among others– does not enter the beef exporting circles, and takes advantage of quasi rents offered to a “Foot and Mouth Disease-Free Country”. In this way such a business culture puts obstacles in the way towards added value, continuous improvement and transparency, while the business environment becomes turbulent.

This is where the remediability criterion applies: if there is a new alternative that may be implemented and if there are prospects of obtaining benefits, the sector will progress and improve its competitiveness. However, when path dependency is too strong, the notion of irremediability emerges whenever any one of the three statements that make up the criterion of remediability is not met.

Path dependency is not only generated by organisations with a business culture that negatively affects continuous improvement, but also by the “Welfare State” and its employees who look for their own personal gain rather than the common good. Further, Argentine agricultural export policies do not contribute to simplify exporting procedures by lowering transaction costs, receiving VAT reimbursements, etc.

Therefore, in the search of alternatives that may result in positive net benefits, consensus should be reached to share the same vision and to focus collective missions on common goals shared by both public and private sectors. Only then will it be possible to introduce the necessary innovations. Innovations of an institutional nature, with laws that may provide the framework for the creation of boxed beef. Innovations of an organisational nature, with networks involving farmers, intermediaries, meat packers, wholesalers, retailers, and exporters. And finally, technological innovations, involving the necessary hardware and software to implement traceability, guaranteeing food safety and quality, and boxed beef, thus improving competitiveness.

Origin and quality assurance systems are an important tool to add value to agrifood and, consequently, to improve competitiveness in the system. The building of competitiveness requires radical institutional changes, new rules of the game to facilitate competitive designs of agrifood chains. In livestock and beef, competitive designs are provided by *boxed beef*, horizontal and vertical coordination and quality assurance protocols -that is true productivity and first order economies. That is where the savings are and where higher margins may be obtained. Reducing overhead and variable costs is simply second order economies, marginal productivity.

However, in spite of the mentioned leading cases that have been or are successful, it is very difficult to develop this type of venture in an adverse environment with an informal business culture and little or no legal certainty. That eventually stops innovators from generating ideas that might add value and reduce transaction costs.

The creation of value, continuous improvement, and traceability require the full enforcement of the rule of law. Quality is not only achieved when a given product is produced under specific fattening methods or in a certain place. Institutions and organisations must pledge compliance with rules and “protocols”.

For new alternatives to develop, be implemented and produce net sustainable benefits, innovations, or, rather, co-innovations, must emerge from fully committed institutional, organisational and technological environments. Only then opportunists and free riders will stay away from the economy, competitive advantages will result, and transaction costs will fall.

Origin and quality assurance systems for any of the three cases analysed here were developed based on a highly specific asset belonging to all the links in the chain. The playing field is a win-win scenario as long as there is cooperation and coordination, but if one of the parties fails, only the players involved can prevent the business from falling.

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