Performance in foreign trade and governance of agribusiness systems of pork and beef *

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Abstract
This paper aims at identifying non-traditional factors of competitiveness of agribusiness systems of meats in the international market. Competitiveness was evaluated through the relative advantage index of exports, by Balassa. The index shows that coffee and concentrated and frozen orange juice continue leading the comparative advantage revealed in agribusiness, but the index doesn't show growth. Pork and beef meat present lower but vigorously increasing export indexes. The role of relative prices of inputs and products continues to be of strategic importance, but they are not enough to explain this performance of the agribusiness systems of meats, deeply related to organizational and institutional innovations. To identify which are the main innovations and how they operate, in-depth interviews were performed with specialists and executives in key positions of the meat industry in Brazil. The importance of natural factors, such as the availability of natural resources is decreasing. The in-depth knowledge of markets, arrangements to guarantee reliable traceability and a new paradigm of animal health, in which agents are more concerned with proactive monitoring of animal health instead of just reacting to outbreaks of animal disease are becoming the main source of competitiveness in international meat markets.

Key words: Competitiveness; Governance structures; Agribusiness exports

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1. Introduction

The main objective of this work is the identification of non-traditional competitiveness factors in foreign markets, above all those associated to business strategies aimed at the compliance with specific conditions required by those markets. The Relative Advantage Index of Exports proposed by Balassa (1989) shows that the competitiveness of non-traditional sectors of Brazilian export, such as the pork and beef markets, has been continually growing in the last 10 years. Thus the interest in exploring the competitiveness of those systems.

Literature on the competitiveness in the foreign markets of agribusiness systems, or even of specific products, emphasizes the role of relative prices of factors, of the exchange rate, of technology and of access conditions to the markets in the explanation of export performance, measured by a set of indicators. BONELLI AND HAHN (2000) review the recent works. In general, the scope adopted is that of the national economy. Some studies seek the determinants of performance in the foreign market in characteristics of companies, such as origin of capital, sector of activity, tradition in the foreign trade, destiny of exports, etc. (for example , CARNEIRO, F.G., 2002).

The competitiveness factors traditionally studied cannot be neglected, given their importance in the companies` decision process and in that of the public sector. However, such factors don't fully explain the performance in the foreign trade revealed by certain firms and agribusiness systems. The Brazilian agribusiness presented increasing commercial surpluses, even when, after Plano Real, it was considered that the exchange rate was over-valued and that the domestic demand grew vigorously. Part of this performance is due to the internal organizational innovations to the companies and to the way of governing transactions among companies belonging to the same agribusiness system. This article explores some non-traditional factors of external competitiveness of the agribusiness systems of meat.

2. Competitiveness revealed in agribusinesses – pork and beef

To characterize the evolution of competitiveness of agribusiness systems which constitute the object of this study two performance indicators have been calculated, the Relative Advantage in Export (VRE), originally formulated by Bela Balassa as Revealed Compared Competitiveness index. Both are sensitive to the relative size of the country whose competitiveness one wants to measure. However, the index evolution can be used to evaluate the gains or losses of competitiveness, which is what most interests us at the moment.

VRE for each country and product is the natural logarithm of the relation between (i) the ratio between the exports of a country and the exports of the same product by the rest of the world and (ii) the ratio among the exports of the other products by the referred country and the exports of the other products by the rest of the world. VRE is given by the following expression:

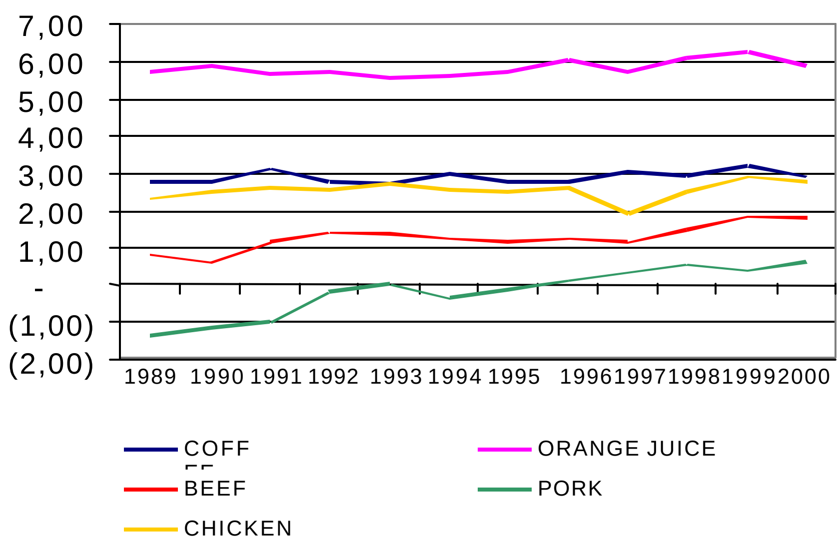
$$VRE_{ki} = \ln\left(\frac{X_{ki} / X_{kr}}{X_{mi} / X_{mr}}\right)$$

In that expression, VRE ^{ki} is the Relative Advantage index in the Export of product k by the country i; ln is the natural logarithm or Neperian; m is the aggregate of all products, except k; and r is the aggregate of all countries, except the country i. X is the export value , aggregated according to the subscripts.

The VRE indicator, as the name tries to show, indicates the advantage of exports of a certain sector in relation to the other exports of the agenda of that country. If the product export participation by the country considered in the world exports is equal to its participation in the exports of other products, the relative advantage index in the exports will be equal to zero. In this case, the referred product does not have relative advantage in the export: the same conditions are applied to the aggregate of other products, and there is no hint of specific advantages of the original product of the referred country. Positive values of VRE suggest that the country gathers specific favorable conditions in the production and/or commercialization of the product considered in the international markets. A not too diversified agenda of exports presents, for the main products, high indexes of VRE, even if the referred economy is relatively closed.

Graph 1 displays the Brazilian Export Relative Advantage of concentrated orange juice, coffee, beef, pork and poultry products. It is observed that VRE of concentrated orange juice is very high, but, just as with the coffee, it is totally stagnated. Both for orange juice and coffee, Brazil is already the largest world exporter and apparently there aren’t many growth possibilities in these markets, at least based on the strategies and traditional products. Pork and beef exports, in turn, show relatively small advantages, however, growing from 1997 on, in the case of beef, and from 1994 in the case of pork. The exports of pork grew rapidly and favorably. From liquid importer, Brazil became the 9th world exporter of the product in 2001. Poultry exports had shown similar behavior in the 1970’s. In the last decade, the export growth rates of meats were consistently larger than the export growth rates of world exports of those products, which suggests that Brazil is occupying space previously occupied by other exporting countries.

Graph 1. Brazil. Relative Advantage of Exports - 1989-2000



Source: Elaborated from primary data of FAOSTAT

3. Competitiveness Factors

The hypothesis adopted in the present research emphasizes the underlying factors to the competitiveness revealed regarding the *innovations in the mechanisms to conduct the transactions in the agribusiness systems, with the objective of implementing competitive strategies.* Such innovations can be given directly in the transaction management structure or in any element of the competitive environment (technology, institutions, sectorial organizations, public policies, etc.).

With the objective of mapping the most recent tendencies of Brazilian exports, and which are not captured by its past behavior, 12 interviews were conducted including companies, associations and specialists.

Based on a literature revision on the theme, four groups of factors have been defined to be explored in the interviews:

a) factors associates to market knowledge – such as the access to distribution channels in the importing countries, the capacity in the identification of opportunities in the new markets, the knowledge of final consumer trends in the importing countries and the capacity of adapting to standards of quality required by the importers;
b) institutional factors – refer mainly to the existence of an environment capable of providing support to the international trade of specific products, such as the recognition, from the importing countries, of processes devoted to guarantee the if the food is sanitary and the risk control adopted by the exporters;
c) systemic factors – are the aspects related to the coordination of agribusiness systems for exploring open or latent opportunities in the international markets. It is, for instance, the relationships among firms with aligned strategies and the provision of collective goods of interest of the agribusiness system or of some of its subsystems;
d) factors associated to the conduct of individual firms – regarding the decisions taken by the firm, such as *marketing* of products and of the company itself, investments in technology, in production, supply and distribution.

Below are the results of interviews, secondary data and literature on the external performance of pork and beef.

3.1 Swines

The exporting performance has roots, among other factors, in the efficiency of primary production. In the South region, the slaughtering annual rate reaches 169%, with an average of 23 finished/matrix/year swines, which reach the average of 110kg in the period of 150 days. These production and productivity indexes are compared to the ones obtained in the USA, Canada, Denmark, Germany, Holland and others.

Out of the Brazilian production 67% is sent to the domestic market as industrialized products. That fact strengthens the bond of the rural segment with the meat processing industry. Many of those companies also operate in the processing of poultry meat, with strong participation in the exports of those products.

The governance of the transactions between rural producers and processing industry must have been facilitated by the exporters' experience with the integrations of poultry. The aviculture model was not transferred mechanically to the production of swine, above all in what concerns the degrees of freedom and the producer's risk integrated in the commercialization of the products. However, the transfer of genetic material and the control of animal handling follow the model of aviculture.

Research and Development, above all in relation to the genetic improvement of the stocks also reinforces the sector's competitiveness. One of the researcher's guidelines has been the development of lineages with less fat, with the objective of improving food conversion in terms of animal protein and to shorten the production cycle.

The demands for the well-being of larger animals in the handling, transport and slaughtering of animals may be associated to increases of production cost. The environmental issue can give rise to the elimination of non-tariff barriers to the international trade.

Brazilian meat exports of pork are concentrated in a relatively restricted set of destinations. In 2002, 78% of the exports were destined to Russia, which is the sixth world producer. In the previous year the participation of exports to Russia was 57%. In 2000, the main destinations of Brazilian pork exports were Hong Kong and Argentina, with 39% and 29% of the total amount exported, respectively. The question posed is the sustainability of the position conquered in the international market. On one side, the economies of the main importing countries are not particularly robust; on the other side, Russia may replace imports.

The export expansion in markets of developed countries faces tariff and sanitary barriers. As per the United States, there is a barrier due to the registration of contamination by foot and mouth disease and African swine plague (in 1974!) of the Brazilian swine herd. Up to now, there are no concrete initiatives for sanitary understandings between Brazil and The United States. There is mutual recognition of free areas or of low illness incidence. Besides, there is difficulty in establishing an equivalence of sanitary inspection processes.

Brazil has comparative advantages in the production of poultry and pork due to the production of grains and favorable climate. However, the competitive advantages are more important. Among them: 1. research institutions (Embrapa); 2. qualified industries (which also make important investments in R&D); 3. organization of productive chains. In Brazil, animal production receives most of the investments in R&D of the agropecuary sector.

The organization of the production system favors competitiveness. Agribusiness works as an umbrella which shelters firms (formally independent) with aligned strategies. The processing industry has, in general, the main role in the chain coordination. An example of the importance of role coordination for competitiveness: Argentina has natural advantages similar to the Brazilians in pork production. It lacks, however, coordination. The relationships among segments of the chain happen, above all, in the spot market. The market fragmentation is bigger: there are 60 slaughterhouses and 320 pork processing industries. The great Brazilian competitive advantage is that, due to the coordination led by the processing industry, the demands from the commercial side have a quick answer - We deliver!

As for the pork market, the largest consumers are Japan, in first place, and the European Union, in second place. Since both markets are closed to the Brazilian export, the country has to turn its production to other developing countries, that is Russia, as already mentioned, the largest importer of Brazilian pork meat. One of the people interviewed sees in this situation the reason why the Brazilian exports are, above all, of *in natura* meat: *Why add value to pork if they cannot pay*?"

Concerning the poultry sector, the factors associated to the market, such as the search for opportunities and distributors' knowledge, are positive, being that the sector development is more related to issues of dispute occurred at the World Trade Organization. In that aspect, the Brazilian production in comparison to the American one loses in the institutional factors which define the trade, but it is extremely adaptable to the consumer market, in other words, contrarily to the American chicken, which tends to be produced in an uniform way, the Brazilian chicken is produced by specification to the market for which it is intended to reach (preference for white meat in Japan, yellow in Argentina, etc.). That is a competitive advantage built based on the vertical organization and coordination of production, a system which is making pork also competitive.

In general, both poultry as well as pork are commodities: price is the most important variable. The customer may prefer someone who has a relatively more efficient distribution logistics and is more reliable (in terms of time limits). The awards for reliability are low (but not to be disregarded entirely, considering the high volume – as a whole, the difference ends up being important). To keep and widen that position, other strategies are necessary, associated to the competition through attributes.

No longer can we find loyal and stable markets. The exporting industry has to live together with restrictive movements in the importing countries and with the action of “local lobbies." That is more noticeable in the pork market , in which only 4 to 5% of the world production is exported, and less in the poultry market, in which there is increased trade volume. In the beef market, the lobby of European producers to protect their markets is very strong. According to one of the interviews, it is difficult to place Brazilian *in natura* meet on the shelves of supermarkets for that reason. Nevertheless, progress has been great.

Exports of pork began with Hong Kong and Argentina. Actually, Hong Kong is an entry door to China. In 2001, China increased the level of sanitary demands and instituted a punishment (heavy fines) for the importers of pork from Brazil. The Brazilian exports to Hong Kong fell. A sanitary agreement with China was made and the restrictions were removed. Thus, the exports to Hong Kong should grow again. In situations like that, government action is indispensable and, according to several interviewed people, it cannot be limited to The Ministry of Foreign Affairs.

In an interviewed person’s words, *there is an extreme dependence on the Government to negotiate in the foreign markets, dependence not only regarding sanitary issues, which characteristically are treated between governments and, more recently, between economical blocks, but also regarding a larger variety of activities which are continually despised by the Brazilian authorities. The European Union creates institutional barriers when refusing the Brazilian import alleging non-existing swine diseases. Though the economical block alleges additionally that the Federal Government (of Brazil) doesn't have any internal type of control on producing States, creating, with that, a Governmental factor of discredit in any situations which demand its direct action. This argument, points out the interviewed person, cannot be refuted by the Brazilian authorities.*

There is a great perception in the meat industry that there is lack of technical qualification of government employees, above all regarding the international negotiation issues. Two different aspects are mentioned: a) many countries have Consuls, who, rarely, don't have the citizenship of the country they represent, but they conduct external negotiations with great ability. In Brazil such situation is non-existent. That is well illustrated by the fact that just the North American Department of Agriculture (USDA) has in the country 04 representatives fluent in Portuguese, while

Brazil maintains only two career employees in Brussels turned to the agricultural negotiation with the entire world.

Another aspect mentioned in the government's capacity issue refers to the wrong idea that the "minister is the one who actually makes the ministry." They are the negotiations accomplished among the medium echelons of the ministries which really determine the opening of new markets, with the ministers left with a more political and symbolic function (signature of agreements). It is exactly the disqualification of this medium echelon which is criticized.

3.2 Bovine

The difficulties of coordinating a complex agribusiness system, owing to the heterogeneity of agents from several segments, are pointed out by IEL; CNA; SEBRAE (2000: 14):

The competitiveness of this system is severely impaired by its diversity and lack of coordination. There are a great number of cattle producers, owing to its size, capitalization and localization level, which adopt different raising systems and a great variety of races. Slaughtering and commercialization also present similar heterogeneity, with clandestine organizations, not inspected and with poor sanitary conditions, to modern slaughterhouses with advanced technologies and production integrated distribution forms."

The transactions between slaughterhouses and cattle farmers are shaky by the lack of efficient institutions to support them. On one side, the system of prices doesn't signal the agents in a sufficient way, setting prices for the finished cattle with medium characteristics and discounting “ex-post" the losses arisen from carcass defects (bruises, tumors, etc.). The agribusiness beef chain works in the development of a carcass classification system which allows the discrimination of prices paid to the producer, with a closer relationship with the value the carcass products will reach in the retail. Thus, the price system would foster the cattle farmer to search for the characteristics valued by the final consumer.

The opportunism which still subsists in the slaughterhouse-cattle farmer relationships is not to be disregarded. The cattle farmer deals with a high credit risk, which contributed to the bad operation of the price system in the fat ox market.

With approximately 10% of the world exports, Brazil is no longer a small participant in the international market. However, it exports less added value products than the average of products transacted in the world market. The exports are still strongly affected by the behavior of the domestic demand. After the stabilization plans of 1980 and 1990, the participation of Brazil in the world exports decreased, due to the heating of the domestic demand.

The “mad cow" crisis (BSE - Bovine Spongiform Encephalopaty) provoked a severe fall in the consumption and in the prices in the European market, which together with the end of subsidies to exports provoked a significant decrease in the production. The increase of Brazilian exports was stimulated by the retraction of the European offer, with the advantage of being originated of cattle raised on pasture, without risk of contamination by the BSE agent.

As in other products, most of the Brazilian meats are exported as raw-material for industry. A very small amount of *in natura* meat goes straight to the distributor or to the food services. Canned processed meats are mainly exported to the United States, but that is a stagnated market. A segment of larger growth is the cooked and frozen meats for soups for which Brazil has increased exports. However, *in natura* meats are those which present a higher growth in value. Although they have low added value in terms of processing, they are prime cuts with higher average prices. In the *in natura* meats the most important differentiation elements are the aggregations of services such as cuts and special weights to supply specific customers. That is a still incipient segment, but that some Brazilian slaughterhouses are already exploring successfully.

Brazilian competitiveness in the beef and pork sectors resulted from different factors. While the first experienced a genetic revolution in the last few years, being it better translated by the decrease in the animals' maturation period, this last one suffered a positive impact of the grain price decrease, above all as a result of government programs. The fact that those two products also suffered a great productive increment in Thailand deserves attention, since this country is a virtual competitor of Brazil, with the advantage of being located closer to the Asian consumer market (Japan is the world largest pork importer).

Institutional factors are very important in the meats, since the mad cow crisis and foot and mouth disease in Europe opened several markets to Brazil. However, to preserve and enlarge the conquered space it is necessary to have tracking systems, accreditation and certification put into practice in the country. That depends on government actions, and also on private actions of collective and individual character. Maybe that is one of the most difficult factors and, at the same time, one of the most important to the competitiveness of Brazilian meat. Difficult - because it demands a change of the entrepreneurs' culture and of the manpower which works in those productive chains. It also depends on the interest and the government's desire to apply resources in that area, which not always has the desired visibility by politicians and government executives. One of the interviewed people affirmed that Brazil is not taking advantage of all advantages of its productive process owing to the lack of implanting and disseminating safety control systems of food and health of herds. In the middle of the 90's, the country already had a plan to set up and operate a structure, but the resources which were already allocated to the plan were diverted to other areas considered priority and, that certainly gave greater visibility to the government.

There is a paradigm change in the determination and monitoring of standards.

OLD PARADIGM	NEW PARADIGM
Disease policy control	Health policies
Sanity recovery (i.e.: foot and mouth)	Process Certification
Focus on the animal	Focus on the relationship animal/man, animal/environment
State - monitoring of risks	Private – risk identification
Control centralization	Control decentralization

The" new dangers" refer to the relationships animals/men and animals/environment; to the animal's well-being, etc. Brazil is in a good situation in this new paradigm. The "cattle in the pasture" is an important flag for Brazilian exporters, although specialists emphasize that it is not a sufficient strategy because it is already being used by many countries such as New Zealand and even Ireland.

Brazil benefits from sanitary subjects. Brazil is not as good in control of diseases than in health policy and, in that sense, the larger the controls the better it is to Brazil. We know the technologies to operate the systems and we have more people involved in that process than countries such as Australia and New Zealand.

Even so we are not exploring all potentials. When there is widespread adoption of rules there will be an enhancement of assets connected to cattle raising.

Traceability in Brazil is still a process which begins within the slaughterhouses. In farms, it is limited to the trade of earrings which identify the animal, but that, without a system of registrations, looses its traceability function. One of the interviewed people affirmed that the producer complains about paying R$1, 00 for the earring because it doesn't use it as a management tool, productivity gain and profit. As an example, the use of the earring avoids damaging the animal leather which increases the final price of the cattle, but that is positive.

The sanitary issue is achieving a character of negotiation between countries and we are not prepared for that. The limits of residues of medicines in the meat are set by countries in an independent way. There is no universal standard.

The issues of well being and animal and environment, still don't constitute effective restrictions to the Brazilian exports. There is the problem of pork production effluents, but the residues are treatable. However, programs of environmental and social responsibility can make the difference and guarantee the sale of the product. An experience of that nature was told by an interviewed person who is beginning to export organic meat to the European market. In that case, the fact of being organic was not decisive for the placement of the supermarket buyer’s order, but the programs developed in Mato Grosso and reported in a dossier on the productive process.

It is difficult to obtain a quality award in exports and it is given only to the best cuts. In order to obtain an award of 5% in the live cattle it is necessary to get 20% of gain in prime cuts, because all the rest of the carcass has to go to the domestic market, in general with a promotion to sell the whole amount. To export the prime cuts (hump) one needs 2000 animals to fill a container. The rest goes to the domestic market with a discount and that consumes a great part of the exporter's award.

The reputation of monitoring and control systems of food sanitation is fundamental to conquer the consumers' trust and to react to crisis associated to the appearance of diseases, contamination etc. The North American USDA, the certificates issued by retailers in Great-Britain and the “holal”, the certificate used by Muslim nations, are receivers of that trust by the consumer.

Still regarding reputation as competitiveness factor, the European demands for being so extreme work as a warranty that if a company is trusted in this market, within six months at most the Asian market (read Japan) also grants commercialization licenses. It establishes, therefore, a virtuous circle of access to markets.

Although the institutional factor is highly relevant for meat competitiveness, today price still commands exports. Brazil has advantages because it has the lowest world cost in beef production and it also presents cost advantages in poultry and pork. However, Brazil cannot enter several consumer markets (e.g. Asia); due to the agreements signed after the Second War and until today they hinder the world meat trade, especially for Brazil, which stays out of the largest and most dynamic consumer markets of beef.

For beef, the exporting slaughterhouses technological updating is very well considered. However, there is still room for important gains in the industrial process area, especially concerning by-products. That discrepancy is flagrant when compared to cattle disassembling at the Australian and New Zealand slaughterhouses

The meat market in Brazil is very fragmented: the 4 largest slaughterhouses answer for 12% of the slaughtering. In USA, slaughtering is much more concentrated, as well as in other meat producing countries. The scale advantages appear in countries where there is an industrial park which demands cattle by-products for the elaboration of high value products such as acids, pigments, film gel. Therefore, an increase on the Brazilian market concentration is expected as the Agribusiness System is developed. While there is little demand of by-products, the small slaughterhouse ends up having more flexibility.

There still are systemic factors which can improve the Brazilian exporting performance. Apart from the traditional `Cost Brazil`, associated to the macro-economic policy, problems with the infrastructure of road, ports and energy are mentioned as elements which deserve investments, in spite of recognized improvement in the last decade.

4. Conclusions

Balassa`s competitiveness indicators analysis for a set of traditional and non-traditional export products of agribusiness products, as well as the Brazilian export performance in the recent period suggests that our main products seem to have reached the limit in terms of relative competitiveness and that new products appear as promising.

With the objective of mapping the most recent tendencies of Brazilian exports, which are not captured by their past behavior, detailed interviews have been conducted with companies, associations and specialists. Those interviews followed an itinerary previously defined so that they could be compared. The specificities of the markets of each one of the products, however, made the consolidation of results very difficult.

The interviews tried to emphasize the factors which could increase the competitiveness of the focused product for the coming years. It was very difficult to separate the factors which guaranteed our competitiveness up until now from those which can make the difference to leverage them from now on. For the non-traditional products, focus of the present article, there is an important role for the Government, basically associated to the construction of an institutional environment appropriate to the new times and to the international negotiations, which are conducted at governmental level.

For pork, as for poultry, the agribusiness system coordination is decisive. The case of beef, in which the transactions happen mainly via the market, the growing demand of traceability and systems of registrations for food safety warranties appoint to a growing need of strict coordination.

Meat commercialization in the international market takes place by means of specific negotiations between exporters and distributors. There isn't an integrated world market, as in our export leader segments of coffee and concentrated and frozen orange juice export leader segments.

Owing to the sanitary demands, which change quickly, promising markets can be closed, whereas problems in the consuming countries can open new and unexpected markets.

Four groups of factors were analyzed: a) factors associated to market knowledge; b) institutional factors; c) systemic factors and; d) factors associated to the strategy of individual firms

The analysis of the consolidated interviews shows that the relative importance of non-traditional factors of competitiveness strongly depends on the sector under analysis.

Institutional factors are very important for meats. Although we have clear cost advantages and availability for expansion of production, our biggest challenge is to take advantage of the opportunities open by the trust crisis in the meats produced in Europe. The mad cow and dioxin crisis provoked an enormous demand for food safety warranty systems. Tracking systems, accreditation and certification are necessary to explore the advantages we already enjoy. The big obstacle to the implementation and diffusion of those practices is more of cultural order than technological, but it also depends on the State's action and reputation. Sanitary standards equivalence agreements have to be accomplished by the Government, although it has the support of private companies.

State performance is also important in the access negotiations to markets, since the forums are inter-government. For beef, that is a critical factor for the future evolution of exports, since we are out of the biggest consumer markets. Although we have process technical conditions, product and packing to supply supermarkets and food services, we lack knowledge, international vision and managerial capacity for this type of strategy to be enhanced. Some leading companies already do so, but they are more an exception than a rule.

Participation in international fairs and organization of fairs in Brazil, aiming at attracting buyers, are strategies considered vital to improve the access to market segments of higher value. Such strategies demand collective action from the entrepreneurs, but not necessarily statal. Nevertheless, support from APEX has been important to galvanize and leverage the efforts of the business community, especially small and medium companies.

Access to retail and food service nets can help break the protectionism of the European market, for the retailers are interested in having safe products with competitive prices to dispute the European consumer.

Certainly, the factors related to the Cost Brazil (high tax burden, high interests, access to credit, infrastructure and exchange policies) were broadly mentioned in the interviews, but the mitigation of that "cost" is not enough to guarantee the competitiveness sustainability of Brazilian agro-industrial products is in the foreign markets.

In general, the natural conditions are important in the country's break -through in the international scenery, but they are not enough to sustain the conquered positions, as the markets are saturated and new exporting countries emerge.

In the case of meat, the natural conditions allow for reconciling low production cost with a low environmental impact. Besides, the country's natural conditions still allow an extensive expansion of cattle for slaughter, aviculture and pork production. There is a very big potential for productivity increase of pastures, obtained with modest investments in soil manuring and preservation. The pork production is benefited with the availability of grains, mainly corn and soy, at prices lower than those of the countries which stand out in those cultures.

In the meat exports, the natural advantages are translated in low production costs and in low environmental impact in absolute terms (cattle raised on pasture) or in relative terms (pork production with lower impacts than those of exporting countries). To benefit from this last advantage, it is necessary to institute believable health inspections (tracking, accreditation from certifying agencies and certification of products and processes). Market knowledge is very important and tends to increase with the reduction of trade barriers. The world market is segmented, with regional preferences which imply the adaptation of cuts and meat weights, besides some demands as for the slaughtering process and carcass manipulation. The sanitary issue is dynamic and requires pro-active behavior from the sanitary surveillance agencies. The firm's behavior is very important, as well as the organization of chains (more accentuated in the case of poultry and pork, less in the beef chains, but with a tendency for intensification): these are the factors that give quick answers to changes in the consumer's demands.

In general, the advantages associated to the country's natural conditions lose importance or are not, by themselves, enough to sustain the positions reached in the international markets. A tendency observed in the interviews is the de - characterization of export products as commodities. Standardization is important, because from there one can meet specific demands for which the consumer is willing to pay. The standardized product, even though it gives room for great physical presence in the market, has a tendency to foster price reduction since the requirements for standard compliance are reproduced by effective or potential competitors. In that sense, in-depth knowledge of markets is the key variable for competitiveness. There will not be one more industry segment which in itself is a good business, but good businesses within the several segments, depending on the capacity of firms to understand and articulate answers to the changing demands of consumers.

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