

Agrifood grades and standards in the extended Mercosur: their role in the changing agrifood system

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Abstract. Agrifood firms and farms in the countries of the extended Mercosur have entered a period of intense competition since market liberalization in the early 1990s. Cutting costs, product differentiation, and setting and following stringent requirements regarding quality and safety of the product (reflected in grades and standards, G&S) have been the threefold and closely related paths to survival for the firms in the major agrifood systems. Due to the public supply lagging behind burgeoning private demand for G&S, there has been a surge of “privatized G&S”, where dominant firms and associations (mainly downstream in the chain) set and enforce their own G&S in order to differentiate their products, and capture the rents generated by consumers responding to quality and safety signals. Nevertheless, the investments required to “make the grade” are costly and spell exclusion for numerous small farmers and processors. The article illustrates with cases from Argentina, Brazil, and Chile, for dairy, fruit and vegetables, wheat products, and coffee.

Key words: food system, grades and standards, Latin America, Mercosur

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1. Introduction

Agrifood quality and safety standards (G&S) have been changing rapidly in the countries of the “extended” Mercosur. These changes are affecting major agrifood systems in the area. This paper presents emerging case study evidence of the changes, their determinants, and their effects.

The extended Mercosur is an area of rapid change in agrifood systems and a fascinating context in which to study institutional change, particularly with respect to G&S. The area includes Argentina, Brazil, Paraguay, and Uruguay as Mercosur members, and Chile as associate. The free-trade area of Mercosur is among the most important in terms of trade volumes in the developing world. It contains global powerhouses of agroindustry and agriculture, such as Brazil, ranked fourth worldwide, and Argentina and Chile, among the global frontrunners in meat and cereals, and fruit, respectively. Income growth and rapid urbanization are changing diets, increasing the importance of processed foods and non-staples as Bennett’s Law predicts. The most important non-staples (dairy, vegetables/fruit, meat, and coffee) have stringent export requirements with respect to G&S in OECD countries, and Mercosur domestic markets are themselves becoming more demanding in this regard.

The paper proceeds as follows. Section 2 presents definitions and theoretical hypotheses. Section 3 discusses policy and market determinants of changes in G&S, and highlights the importance of the emergence of “privatized G&S.” Section 4 hypothesizes that the changes in G&S are adding fuel to the forces of agrifood system concentration in the area. Section 5 concludes.

2. Definitions and Theoretical Hypotheses

G&S consist of a collection of technical specifications, terms, definitions, and principles of classification and labeling. They include rules of measurement established by regulation or authority (standards) and a system of classifications based on quantifiable attributes (grades) (Jones and Hill). G&S can pertain to outcomes or processes related to: (1) quality (e.g., appearance, cleanliness, taste), (2) safety (e.g., pesticide or artificial hormone residue, microbial presence), (3) "authenticity" (guarantee of geographical origin or use of a traditional process); and (4) the "goodness of the production process" (e.g. with respect to worker health and safety, or to environmental contamination). "Outcome G&S" are the characteristics the product is expected to have when it reaches a certain point in the agrifood chain, for example, the maximum amount of pesticide residue permitted when apples are purchased from a grower by a processor. "Process G&S" concern the characteristics of the processes in the agrifood chain, from production of the raw product, to processing into intermediate or final goods, and distribution. For example, they might specify that an apple be organically grown or that milk be stored/handled in certain ways so as to keep the bacteria count below a certain threshold. HACCP standards are important examples of process standards.

The hypothesized effects of the establishment of G&S on an agrifood system are theoretically ambiguous. On the one hand, G&S can increase the market size for a particular product, reducing barriers to entry so as to allow the participation of more firms and the expansion of trade, thereby increasing transaction efficiency and lowering transaction costs. They can do so either by defining and facilitating a broad commodity market or by defining a set of differentiated products. Greater market efficiency and broader participation of firms imply more competition, potentially leading to lower consumer prices and better product quality.

On the other hand, G&S establishment can decrease market size or limit the number of firms participating, by increasing entry barriers through raising investment requirements for participation (Reardon et al., forthcoming). An extreme form of this is the non-tariff trade barrier; a milder but still effective form is a certification requirement for an input supplier. Those who are “included” may have a higher profit rate due to efficiency gains imposed by meeting the standards (Mazzocco 1996), and because barriers to entry or exit obviate the reduction of profits due to newcomers’ competition. Those excluded may find a secondary market in which to sell, or may exit. The investment requirements can range from upgrading management skills to new equipment purchase to establishment of quality control and coordination systems. This restriction can create more product diversity through establishment and defense of niches, but could have ambiguous effects on consumer prices and welfare.

What form G&S will take (outcome or process), who will establish and implement them (government or private firms), and what effect they will have (e.g., inclusion or exclusion of small firms from the market, raising or lowering consumer prices, expanding or contracting the market size) will be conditioned by a complex set of variables. The latter include policies and extant market and industry structures, by the type of product, and by organizational responses of system participants (such as formation of associations to implement standards or to improve the capacity of the members to make the investments needed to “make the grade”). Moreover, whether the G&S are “outcome” or “process” oriented also conditions the effects of their imposition, as process G&S are more costly and difficult to implement both at the system and at the firm level. The conditioners and effects will be further explored below.

3. Policy and market conditioners of G&S change

Policy change drove market liberalization. Policy change, basically market liberalization in the past decade, greatly increased competition in the agrifood markets of the area. Pre-liberalization food policy included fixed prices, subsidies, high tariffs on processed foods, overvalued exchange rates, and foreign investment limitations. These policies limited the opportunities for product differentiation and entry of new competitors be they domestic or foreign firms, but kept consumer food prices lower and domestic capital's profits higher than they would have been in the absence of those policies. This was coupled with the presence of large public sector firms in the input industry,, and subsidized and protected agriculture and processing.

About a decade ago, the countries of the area each undertook major structural adjustment/liberalization programs, freeing trade, reducing obstacles to foreign direct investment, and reducing subsidies and public support to agriculture. The result was increased competition and, initially, reduced barriers to entry. That led to an initial deconcentration of the agrifood sectors as firms of a range of sizes jumped into the market. However, with intense competition (with price declines and quality increase requirements acting as double-pincers on producers), by mid 1990s there began a process of rapid concentration or re-concentration. This is illustrated in the case of wheat products in Brazil (Farina 1997) and dairy in Argentina (Gutman 1999). This concentration was combined with rapid multinationalization due to mergers and acquisitions by foreign firms of many of the small-medium new firms as well as some struggling existing domestic medium-large firms that could not bear the new competition. There was also concentration further down the chain, with the very rapid rise of supermarkets and food service firms and chains selling fast food (Belik, 1999; Farina, 1999; Jank et al. 1999, Gutman, 1999, Moguillansky, 1999).

The new competition required a new strategy of survival for agrifood firms, for which the establishment of G&S was crucial. The newly competitive context in the extended Mercosur in the 1990s required a three-pronged strategy of firms in order to survive. First, firms needed to differentiate their products and identify niches. G&S were critical to that product differentiation, as they have been globally in the past decade (Leat et al., 1998). Second, firms needed to communicate product quality and safety to consumers or intermediate input purchasers. Certification and labeling schemes were crucial to the communication of the implementation of quality and safety G&S. Finally, the surviving firm was a firm that had reduced costs while maintaining quality.

However, there was and is a lack of public G&S in place, which was one of several factors inducing the “privatization” of G&S. Whereas private agrifood sector development cried out for G&S to facilitate the strategy of competitive survival described above, the governments of Mercosur, individually and collectively, lagged in the needed creation and harmonization of G&S. Food products are supposed to meet the International CODEX and the G3 group has the responsibility to harmonize standards within Mercosur. However, few products yet have standards. This lack had several effects.

On the one hand, trade disputes, especially between Argentina and Brazil, have dogged the steps of intra-Mercosur trade development. Disputes have focused on labels, package dimensions, and physical attributes. Recent trade disputes among Brazil, Uruguay, and Argentina, concerning rice, poultry, and potatoes, were based on use of specific chemical inputs, packaging, and more recently, GMO's. Inter-country differences in standards induced Sadia, the leading Brazilian poultry products firm, to build a plant in Argentina, just to package meats according to Argentine standards, as the latter differ from those of Brazil (Farina, 1998).

On the other hand, the lack of or disharmony in public standards has spurred “privatization” of G&S. Firms and associations had strong incentives to create and enforce standards and communicate them to consumers via labels and certification in order to capture rents from quality and safety and product differentiation.

In some cases, public G&S existed, but their form or specified levels did not meet the needs of the private agrifood system actors, and were perceived as hindering transactions. A typical situation is where the gradations and attribute categories in the public G&S were too narrow and simple to permit and facilitate the product and quality differentiation that the market was ripe to allow. Farina et al. (1999) identified nine Brazilian agribusiness systems, including seven commodity systems, such as corn and soybeans, where this situation occurred, even after a decade of deregulation.

Wheat product, coffee, fruit/vegetable, and dairy products cases from various parts of Mercosur illustrate the G&S privatization discussed above.

For wheat products, during the 1960s-1980s, the Brazilian market was strictly regulated, and there were only two grades of wheat flour in the public G&S. With market liberalization circa 1990, domestic wheat milling firms (such as Moinho Pacifico and Pena Branca, the case studies) were able to offer a variety of grades of flours geared to the needs of the bakeries. The millers created their own G&S system to supplant the public system and reflect and create the incentives for product differentiation. However, the strategy has turned out to benefit imports, because wheat flour is an international commodity that has adequate and well-known grading system that allows Brazilian milling companies or the food industry (pasta, bread and biscuits) to globally source (Farina 1997).

Similarly for coffee, in the second half of the 1990s, the Coffee Roasters Association of Brazil (ABIC), as well as foreign firms such as the relatively small Italian firm Illycaffee, promoted differentiation strategies based on blends of different types and grades of coffee and used these to establish price differentials to create an incentive for coffee growers to make the necessary investments in quality control. Again, the new private standards were much more adapted to the needs of quality and variety differentiation than were the public G&S (Zylbersztajn & Farina, 1999).

Private coffee system actors also moved quickly to establish G&S implementation systems that would be highly visible to domestic consumers and foreign buyers and create incentives for their suppliers. CACCER – the association of coffee growers from the Brazilian Cerrado region - created a certificate/label for its products based on area of origin. *Illycafe* established a particular standard, which includes product and process attributes to be met by its coffee suppliers in Brazil. ABIC created the ABIC certificate based on pureness requirements (Saes and Farina, 1999). For organic coffee (and soybeans) G&S implementation has been coordinated mainly by cooperatives that process the products (Nunes and Leao 1999, Saes and Farina 1999).

For fruit and vegetables, Mateos and Razquin (1999) note, starting in the 1990s, that Argentine supermarkets have increasingly made direct contact with farmers or worked through new intermediaries that have emerged for this purpose. As supermarkets seek increased diversity and quality of fresh produce, the issue of the lack of adequately differentiated and specific G&S is emerging as a bottleneck. The supermarkets have moved toward imposing private G&S to solve this problem. In Brazil, large public wholesale centers have implemented G&S in order to operate electronic auctions. However, a key driving force in establishment of quality

management systems and private G&S in fruit/vegetable chains in both Argentina and Brazil (Farina and Machado, 2000) has been the rapid entry in the 1990s of large multinationals, such as Birdseye or McDonalds, that have imposed their own standards; the latter have caused important restructuring of frozen vegetable chains in Argentina, for example (Ghezan 1999).

In Chile, medium/large producers and domestic and multinational exporters of fruit and the government have created a multidimensional strategy of export market promotion and G&S implementation (Codron 1992). They formed the Coordinating Committee for Fruit and Vegetable Producers and Exporters (linking two associations). That committee, plus the National Agricultural Association, recently formed a “code of good practice” for production, processing, and distribution of fruit for export. They are working with the Ministry of Agriculture and the national CODEX entity to influence Chilean health and safety laws, infrastructure provision (better road, port, and storage facilities), and international CODEX discussions. The committee is also seeking to be an interface with powerful supermarket chains that dominate the domestic market. The goals of the committee are to differentiate Chile’s fruit product, creating a clear international identity, and to raise quality, hygiene, and the storability of the fruit (Mercurio, 1999 and 1999b). Tradeoffs among these create the need for continuous adjustment and debate and thus a forum that reflects needs along the chain. There are also discussions under way with the private non-profit Fundacion Chile to set up certification systems (Eugenia Muchnik, personal communication, May, 1999; Reardon et al., forthcoming).

For dairy, in Argentina, Brazil, and Chile, both cooperatives and private firms have imposed new standards for milk producers. The recently established G&S specify milk refrigeration within the farm along with volume and microbiological requirements (Gutman, 1999; Jank et al., 1999). The Brazilian government is developing new legislation to regulate

safety in dairy products, strongly promoted by the private sector. Multinational companies have also required higher product and process standards to guarantee safety and lower costs. Nestle has provided incentives to its suppliers to adopt the Nestle Quality Assurance System that comprises process and products requirements (Farina et al., 2000). Finally, as in the case of fruit/vegetables, the rapid increase in the relative power of supermarkets in the chain has meant that logistical requirements and G&S imposed by them have strong impacts on the Argentine dairy sector (Gutman, 1999). Part of these effects has been deep organizational and technological change that has had the effect of excluding many small producers. We explore this further below, and find that the phenomenon is not confined to the Argentine dairy system.

4. Hypothesized effects of the new G&S in the agrifood systems in the area

Reardon et al. (forthcoming) note that establishment of or change in G&S will not in general be neutral in its effects on the profitability of a given subsector, nor neutral on the relative market shares and performance and incomes of different types of producers.

On the one hand, for those firms that survive or are “included,” the G&S can increase profits. This can result from (1) greater inter-firm efficiency in the agrifood system due to the coordination benefits conferred by G&S, (2) the greater efficiency of resource use, (3) lower transactions costs facilitated by the G&S, and (4) economies of scale from bigger markets (see Mazzocco, 1996 in general, and Farina et al. 2000 for the case of Sococo-Nestle link in Brazil).

On the other hand, these systems introduced new costs through new practices, coordination costs, and investment requirements in new or modified equipment and acquisition of new skills and information. The investments required might include specialized and specific assets, creating sunk costs and increasing transaction costs. There is reason to believe that these

costs are much higher for process than for outcome G&S. Recall from the second section that there is a tendency for a shift from outcome to process G&S in export markets for products such as fruits and vegetables, fish and meat, and dairy products. There is growing evidence that this will be hardest on the poor/small actors in the agrifood chains (seen from the investment perspective above and management expertise as well), and can be a catalyst of concentration. Meeting process G&S (such as HACCP, ISO or even organic standards) tends to be harder for small firms/farms in a given LDCs, and for poorer LDCs in general (see Diaz, 1999, for cross-LDC evidence from a UNIDO survey of standards bodies).

Uneven adoption over firms of the practices, technologies and investments needed to “make the grade” translate into concentration of the subsector and the eventual exclusion of the poorer/smaller farms and agroindustrial firms or farms. There is growing case study evidence that the imposition of stringent, privatized G&S in various Mercosur agrifood subsectors in the past decade was one of the key reasons for concentration of the subsectors and exit of substantial numbers of small firms and farms.

A poignant example is that of the dairy sector in Argentina, Brazil, and Chile, as described in case studies by Gutman (1999), Jank et al. (1999) and Dirven (forthcoming), respectively. Quality and safety G&S imposed by the formal sector market -- large processors and supermarkets -- required adoption of refrigeration tanks, which are subject to indivisibility and require a minimum scale. In Brazil, the smallest tank has 200 liters, requiring at least 100 liters of daily production. As the average size of farm milk production is 50 liters per day, half of the Brazilian milk producers immediately found themselves out of the formal market. Smaller farmers have adopted collective tanks in order to meet the scale requirement, though larger farmers will keep their advantage because they do not face transaction costs that are present in

collective use of physical assets. The evidence in Argentina and Brazil shows that thousands of small dairy producers were forced to exit in the past decade because of low prices, and logistical and equipment requirements related to the G&S imposed by the downstream actors. By contrast, larger farms and processors found themselves at an advantage, and were able to acquire even more equipment due to credit access. Farina tells a similar story for the Brazilian wheat products sector and for the coconut products sector (relating Sococo's increased profits investments in quality assurance to deliver processed coconut to Nestle) (see Farina 1997 and 2000, respectively).

The converse of the above story of the exclusion of the small players is that the larger players also suffer inefficiencies from the necessity of internalizing phases of production because of lack of sufficient numbers of farmers with whom they can contract to supply their intermediate inputs in a way that allows them to meet G&S requirements. Suppliers of fresh cuts to fast food stores in Brazil illustrates this backward vertical integration (Farina & Machado, 2000).

On the other hand, G&S diffusion may improve the bargaining conditions for small and medium farmers as they get more and better information on product markets – and get it faster -- and can compare prices. Asymmetric information on market conditions benefits middlemen and creates a source of quasi-rents.

In section 2, we noted that, in theory, the effects of G&S imposition are ambiguous a priori, and depend on policy, institutional, and organizational responses of governments and agrifood system participants. One such response could be for small firms or farms to associate in cooperatives or clusters (such as the CACCER coffee case in Brazil discussed above), or to engage in subcontracts, alliances, and other links with large-scale processors and supermarkets

and traders. An example of the latter is the Brazilian leading dairy processors financing or facilitating credit access for milk producers. To wit, the Brazilian National Development Bank offers a special line of credit at favorable interest rates to the “pro-leite” program. It is common for large processors to act as an intermediate agent that facilitates the distribution of this credit to milk farmers.

5. Conclusions

The effects of the changes in G&S, and the investments, and changes in practices and technologies that they imply, have led to profound changes in only a decade in certain key sub-sectors in the extended Mercosur countries. These changes included, in some cases, concentration and exclusion of small producers (such as from the adoption of refrigeration standards). In other cases the initial effects have been induced organizational and institutional responses related to privatized/specific standards, such as certification, formation of farmer companies, and business linkages with international firms, that can favor the small producers if they are able to manage quality. Hence, G&S adoption and dissemination have ambiguous consequences. On the one hand, it can exclude small and medium firms that are unable to meet the needed investments in tangible and non-tangible assets. On the other hand, segmentation and market niches may represent a good opportunity for those same firms, provided they have the required training and proper financial resources.

As a consequence, important roles for governments are as follows. (1) Governments can provide to those firms adequate instruments for empowerment of human resources and credit to finance physical investments. (2) Governments can foster basic G&S systems in order to improve the commodity chain and market efficiency. Basic attributes related to appearance,

weight and safety can be regulated. Finer classification and complex attributes related to product and process should be left to private agents who are more efficient at responding to ever-changing consumer demand. (3) Governments can guarantee adequate property rights protection, in order to reduce transaction costs, risks and barriers to entry and exit, fostering competition and efficient outcomes. (4) Private efforts toward, as well as government encouragement of, economic associations can help small and medium farmers and firms overcome scale and scope barriers and human resource requirements implied by stringent G&S in the dynamic and demanding markets of the expanded Mercosur and its trading partners.

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