

# **The Rise of Private Food Quality and Safety Standards: Illustrations from Brazil**

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### **Introduction**

Until recently, food grades and standards were viewed (in policy debate and research circles) nearly exclusively as public domain issues -- not as a subject strategically relevant to private sector

management. The focus on standards as public policy issues was rooted in several factors. (1)

Historically, standards have arisen with rise of markets for commodities, often as public standards to reduce transaction costs and increase efficiency, allowing expansion of trade. (2) Standards were viewed as public goods necessary in the presence of imperfect and asymmetric information that cause market failure. (3) The recent debates related to the WTO have focused attention on standards as potential non-tariff trade barriers erected by governments to block imports competing with domestic production.

This paper argues that in the new competitive context of liberalized, globalized food markets, standards should be seen as at least as much an issue for private sector management as for public sector policy. The importance of private standards for the competitiveness of downstream firms in the chains (such as retail and processors) is paralleled with the importance of meeting new private standards for the survival of suppliers upstream in chains.

We begin with a general discussion of the reasons for the rise of importance in private standards and then focuses on illustrations from Brazil. The latter is because Brazil presents a fascinating combination of rapid concentration in key product chains (and thus exit of many small firms upstream and downstream) and rapid growth in the domestic and export food economies. We think that the rise

of private standards plays a key role in this “boom with exclusion” food economy, and believe that it is important, for management and policy reasons, to explain why. The paper thus proceeds from general discussion to illustration and concludes with implications. We use “G&S” for grades and standards.

## **The Determinants and Effects of the “Privatization” of Food Standards**

### *Types of Standards and Relation with “Privatization” of Standards*

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).

“Performance 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.

In principal, there is increased incentive for standards to be public (set and enforced by government) the greater is the public good nature of the standard, and the lower is the incentive and the capacity of private firms to set and enforce standards. In general then, one could argue that the incentive and capacity for privatization of standards would be (1) strongest for quality standards and for process rather than performance standards, (2) intermediate for food safety standards, and (3) weakest for agricultural health standards.

While the ranking (1-3) for relevance of privatization of standards is defensible conceptually in a relative sense, there is evidence that the incentives and capacity for privatization of both food safety standards and, to a lesser extent, agricultural health standards, is increasing, under the following conditions.

The first condition is where food safety and agricultural health standards are not strictly enforced by public authorities, but the reputation of private retail and processing firms depends on a safe product. That is why one finds private or semi-private food safety standards and certification systems arising among supermarket chains in Latin America, such as the PIPAA system in Guatemala and similar cases with Carrefour in Brazil for vegetables (Seal of Guarantee of Origin of Carrefour). In some cases, such as with McDonald's in Brazil, private agricultural health standards (in their case for lettuce seeds) were critical to assuring private quality standards (for lettuce on hamburgers). It is also the case with private milk standards in Brazil, a case discussed below.

The second condition is where a private firm combines quality and safety standards in a meta-management system embodied in a process standard and certification. This appears to be becoming increasingly common as process standards (such as HACCP) grow rapidly in importance, and the need

for chain management through private standard systems rises with competition at the market end and for high-performing suppliers. An example is that of the Nestle Quality Assurance system for coconut products in Brazil, a case discussed below.

### *Determinants of “Privatization” of Standards*

The relatively recent rise of the importance of private standards, for three reasons.

First, in many places and for many products, the demand for standards (to define and regulate markets) has out-paced the growth of supply of public standards. Farina and Reardon (2000) illustrate with Mercosur examples, among them several Brazilian. The newly competitive context in the extended Mercosur in the 1990s required a three-pronged strategy of firms in order to survive: (1) firms needed to differentiate their products and identify niches. G&S were critical to that product differentiation; (2) firms needed to communicate product quality and safety to consumers or intermediate input purchasers, and certification and labeling schemes were crucial to the communication of the implementation of quality and safety G&S; (3) the surviving firm was a firm that had reduced costs while maintaining quality. However, 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. 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.

For example, 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).

Second, standards are not merely public goods to resolve market failures -- they are strategic instruments of market differentiation and market share and niche protection by food companies (Reardon et al., 2001). The illustrations above do double-duty in establishing this point. The growth of their strategic role in the rapidly changing food economy of the 1990s was paralleled in the theoretical

literature by growing empirical research in the vein of new institutional economics, with resurgent interest in established theories of market capture and rent-seeking.

Third, private standards have become increasingly important as tools of chain coordination, as meta-management systems (Caswell et al., 1998) to implement process standards such as HACCP and quality process standards such as ISO standards, at each level of the chain. This is done to cut costs and thus be competitive in a liberalized market, and assure quality and safety.

### *Effects of “Privatization” of 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., 2001). 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.

Such investment costs can be very substantial relative to the means of small firms, and can force their exit or their movement to a less profitable market. These effects are illustrated in the Brazilian dairy case below.

### **Illustration: Privatization of Standards in the Brazilian Nestlé-Sococo Case**

Nestlé-Brazil's market strategy for coconut products is centered on product differentiation coupled with assurance of quality and safety. The PENSA case study from which this illustration is drawn (Farina et al. 2000) treated, inter alia, the use of a system of private process standards for both quality and safety to implement this strategy, and the effects of that system on a coconut raw and semi-processed coconut supplier, Socôco. The latter is among the largest and most modern coconut processors in Brazil and in the world. In the late 1990s, Socôco supplied 80% of Nestlé's input of grated coconut. While Nestle is global and diversified, Sococo is national and specialized, as well as vertically integrated (primary production and first-stage processing). Thus, Sococo is more exposed to the risk at the production and marketing levels.

Nestlé's need for consistently high-quality and safe grated coconut, and Sococo's need for means to manage market risk, together drive the use of the Nestlé Quality System (NQS) as the

institution mediating the relationship of the two firms. Before 1991, Nestle used performance standards and implemented its own monitoring -- subjecting samples of water, raw material, semi-manufactured products, and final products to tests in its laboratories. The process was time-consuming and risky.

After 1991, implementation of NQS increased quality and safety (to Nestle global, private standards) and traceability, reduced risk, and drastically reduced the monitoring cost of raw material quality from the certified supplier (as the inspection of the product no longer takes place at the Nestlé factory, and Nestlé can ask the supplier for the results of its monitoring of the production processes for each lot of an item sent to the factory).

Socôco was invited by Nestle in 1996 to take part in the system. By 1999 -- three years later - - Sococo had obtained full certification for its full vertical chain -- from coconut production or import to first-stage processing. The firm must assure product quality and safety, beginning with coconut production, and first-stage processing of careful manual removal of the meat (allowing no residues of shell filaments that would discolor the grated coconut, dehydration, adjustment of oil content and fiber length, and packaging. Additional substantial effort is needed for training workers and documenting operations. The process standard of NQA is equivalent to a combination of ISO, HACCP, and GMP (Good Manufacturing Practices).

Given that certification involves investment and adaptation costs, an incentive is needed. For Nestlé factories, the strong motivation is in the benefits described above. For suppliers, three main incentives seem to induce them to make these investments: (1) operation at a large scale; (2) the creation of a general reputation for the firm, based on the NQA certification, which serves it well in the rest of the market, communicated by advertising; (3) cost reductions from the increase in efficiency. The

case study found that Socôco perceived these benefits.

However, NQA carries not just benefits but also risks for a supplier. The great risk of the investment is that it is characterized by high specificity, since other purchasing firms do not adopt these procedures and, therefore, do not value them adequately. If the firm stops supplying Nestlé the investments will not have the same value, which characterizes the specificity of the assets involved, especially the human resource training. The certified supplier has its product immediately liberated, but does not enjoy commercial price advantages or even a purchase guarantee. There is no formal purchase commitment between the firms. There is no contract that guarantees exclusivity of supply or preferential treatment in the purchase. If the price of the imported product is lower, the national raw material may be replaced. Nestlé can, indeed, certify competing suppliers, as is the case of two firms supplying labels and packaging, two for glass, two for wheat flour (in addition to another two undergoing the certification process), etc.

In the case of Socôco, the investment specificity is low because 75% of the coconut that it processes is destined to products of final consumption with the firm's brand name. Thus, the majority of the investment in quality management can be appropriated by loyalty to the brand name and by the cost reductions resulting from this process.

There are also risks for Nestlé in imposing a costly certification process, as it means dependence on the few firms that can meet the requirements – hence its dependence on Socôco is great. The second national supplier, Ducôco, operates on a much smaller scale and is not yet a certified supplier. The spot market works with coconut of inferior quality demanding traditional analysis procedures that take time to liberate the raw material, making it necessary to maintain stocks so as not

to interrupt the rapid production of Prestígio.

The Nestle-Sococo case-study shows that quality and safety private standards systems have direct impacts on costs. In an environment of heavy rivalry and a fight for margins throughout the productive system, quality management can no longer be considered an alternative strategy to cost leadership, as suggest many approaches in which the differentiated product is contrasted with the commodity. In this case, cost leadership becomes complementary to the exploration of specific attributes of the product, as long as they are brought to the consumer's attention.

### **Illustration: The Interaction of Private and Public Standards in the Brazilian Dairy System**

The Brazilian dairy sector provides an interesting case of the interaction of private and public systems of standards. Public standards for quality grades formulated in the 1950s were then used in the 1970s by the private sector for market segmentation; then private standards for milk safety formulated in the 1990s for both market segmentation and reputation, are now being taken up to make public standards for milk safety. The story is as follows.

First, milk quality public standards (with grades A, B, and C), were formulated in the 1950s. They were not implemented until the 1970s when milk processors and retailers began using them for market segmentation based on quality, to take advantage of rapidly expanding urban milk consumption and rising incomes.

Second, in the 1990s, liberalization of foreign investment led to an influx of foreign direct investment and then entrance of global dairy products firms such

as Parmalat, Royal Numico and MD Foods, along with new investments of Nestle. Dairy products price competition rose (with a 40% drop in real retail prices for milk over 1994-97, while farmgate prices did not fall up to 1997/98), while incomes rose hence the dairy products market burgeoned. Stiffer price competition in dairy product markets led to the adoption of new strategies of chain management in Brazil. Leading processors, such as Itambé (the largest Brazilian dairy coop and second largest dairy processor), Nestle, and Parmalat, imposed new private standards for milk producers -- for both quality and safety. The recently established G&S specify milk refrigeration within the farm along with volume and microbiological requirements (Jank et al., 1999). So far, the main objective of dairy companies and cooperatives is cost reduction needed to meet tougher price competition. A better raw material quality reduces losses in industrial processing, allow large scale transport and more efficient logistic strategies. A secondary, but growing objective is to communicate milk safety to a public and avoid food safety scandals; this is reenforced by rapid concentration on the retail side, with some 75% of the Brazilian retail sector now dominated by a handful of large supermarket chains (Farina, 2000).

Fourth, in the 1990s, for the milk producer, the private-standards requirement that his milk be refrigerated at the farm level implied obligatory and large investments. In less than five years the leading firms completed their programs of “bulking” (transport of milk in bulk to refrigerated tanks cooled at the farm level). This implied a change in standards to require investments in the whole system, at the producer, transporter, and receiving plants. The result has been the exclusion of 1000s of dairy farms from the chain in the past decade. Small farmers tend to be excluded from these changes unless they have access to education, technical training, and capital. Dairy companies have provided capital and

some technical assistance. However, their target is a smaller number of larger milk producers, leaving little room for the private sector to engage those producers. While the excluded suppliers are mainly small firms, they also include beef/milk producers or the beef producers who sell milk during high season. In this case, the US experience is useful. After the introduction of refrigeration tanks there was a fast and strong decline not only in the number of milk producers, but more importantly, in the number of farms with milk cows. This experience shows that the adoption of this technology fosters specialization process. Of course, milk refrigeration produces benefits for surviving dairy farms. The farmer tends to become more sensitive to price variations, though more efficient. Third, in order to take full advantage of this technology, the milk producer is stimulated to perform a second milking, then mechanic milking, then improvements in genetics. The technological upgrade requires managerial upgrade.

Fifth, the private sector interest in milk safety is now being taken up by the government, to protect the consumer. To cope with a huge informal market (30% of milk consumed) and a number of contamination and frauds scandals, the Brazilian government has recently created the Sanitary Inspection Agency whose main objective is to watch over food and drugs integrity. Moreover, as reported in Farina (2000), the Brazilian government is developing new legislation to regulate safety in dairy products, which is part of a wider “Milk Quality Improvement Program”. The legislation will make the current private standard public, requiring refrigeration at farm level and refrigerated transport systems. The Brazilian government plans to generalize the above standards that today are private, will face important obstacles such as the lack of universal rural electrification and insufficient laboratories to test for quality attributes required in the legislation under debate. It is harder to create the conditions for

the formation and enforcement of a public, general standard than to adopt private standards, that, by their nature are restricted to a subset of producers and processing firms.

## **Conclusions and Implications**

In the past several years, during heated debates around the WTO and public food standards, the private sector has rapidly built up an array of private food standards to assure quality and safety in a fiercely competitive market. These private standards have sometimes been to fill in for missing public standards, especially for safety, and to differentiate products and build reputation, for both quality and safety. Moreover, private standards are increasingly related to meta-management systems assuring both quality and safety at all levels of a chain, enforcing and certifying the implementation of process standards.

The privatization of standards has been important for both buyers and suppliers in the chain. They tend to be formulated and imposed by buyers (retailers and processors), and are key to their cost control and reputation with consumers, thus overall competitiveness. They are imposed on suppliers, who often find, as we showed with examples from dairy and coconut products subsectors in Brazil, that the standards imply very substantial outlays for reporting, new equipment, and training. The lucky – a relatively small subset of the original set of suppliers – tend to find that meeting the standards, with formal certification in hand, benefits their business, opens new opportunities. The excluded tend to find themselves relegated to waning and unprofitable markets.

The implications for policymakers, NGOs concerned with producers and consumers, and

managers of retail and processing firms, are: (1) the system of private standards should be of keen interest, at least as much as public standards; (2) suppliers should gear up for substantial investments to meet stringent private standards or be excluded from supply chains; (3) scaling-up private standards into public systems will face important challenges related to access to capital (such as electrification) in poor areas, and to administration and enforcement and incentives provision.

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