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A New World of Standards

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Introduction

The nature and context of standards in the food and agricultural sector have been changing rapidly. We are entering a new world of standards that demand significant changes in production and marketing strategies. This paper attempts to summarize this new world of standards, both private and public, and introduce the institutions that are mandated to develop and monitor compliance to those standards. Though most of these institutions are either domestic or multilateral, regional bodies also have a part to play.

The term, standards, when applied to agricultural markets, has many meanings. Even before the USDA's creation in 1915, the establishment of such quality standards was an important element of U.S. agricultural policy. Product quality standards, judged by the external appearance of the products, were intended to facilitate pricing and trade in markets. The rationale was straightforward: it was recognized that prices are meaningful as signals to consumers only if they relate to products of identified homogeneous quality. The broadest authorization for current quality grading systems is provided by the 1946 Agricultural Marketing Act, although commodities such as cotton, grain, and tobacco have their individual authorizations (Breimyer; Knutson and Sporleder). These quality standards have comparatively little to do with the safety of a product for consumption purposes.

Section 401 of the Federal Food, Drug, and Cosmetic Act requires that whenever such action will promote honesty and fair dealing in the interest of consumers, regulations shall be promulgated fixing and establishing for any food, under its common or usual name so far as practicable, a reasonable definition and standard of identity, a reasonable standard of quality, and/or reasonable standards of fill-of-container. The Food and Drug Administration (FDA) also regulates standard terms used by industry in making nutrient content claims.

U.S. public policy concerns about the safety of the food supply developed late in the 19th century with the discovery of blatant cases of adulteration of the food supply.¹ The result was the enactment, in 1906, of the Meat Inspection Act and Pure Food and Drug Act. The existence of two separate U.S. laws resulted in the separation of regulatory authority between the USDA for meat and poultry inspection, through the agency of the Food Safety and Inspection Service (FSIS), and the Food and Drug Administration (FDA) for

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¹ These were subsequently chronicled for the meat packing industry by Upton Sinclair in his 1906 book, *The Jungle*.

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processed foods (including prepared foods).² This divided responsibility has survived to the present. Meat and poultry health and safety inspection represented an extension of the quality grading system: the USDA standard for the safety of the meat supply was based on inspectors' senses on sight, taste, and smell from 1906 through 1996 (Knutson, Penn, Flinchbaugh, and Outlaw).

FDA standards have placed emphasis on the content of the products, banning additives that were demonstrated to be harmful to health while accepting additives that were "generally recognized as safe (GRAS)," for example, in food preparation and preservation. As agricultural sciences progressed, more chemicals were used in agricultural production practices, and methods for detecting chemical residues improved. Accordingly, the emphasis began to shift to the safety concerns arising from the presence of this new set of additives to the food supply.³ Additionally, concerns were raised about the impact on the environment of agricultural chemicals, and this eventually led to the creation of the Environmental Protection Agency (EPA), which treated chemical residues as additives as is the case for products of biotechnology. So EPA joined the FDA and the USDA in the development and monitoring of standards.⁴

An additional regulatory aspect of protecting the safety and integrity of the food supply involves the control or eradication of plant and animal pests and diseases. The leadership for the responsibility for control of pests and diseases resides in USDA's Animal and Plant Health Inspection Service (APHIS), although the Public Health and Biosecurity Act of 2002 transferred the border inspection function to the Department of Homeland Security (DHS). An overlap exists between such concerns and human health issues: some of the animal diseases can directly impact human health (zoonoses), which is also of interest to the Center for Disease Control (CDC). Like DFA, CDC is located in the Department of Health and Human Services (DHHS). The diversity and complexity of several government agencies located in different departments serves to emphasize the need for coordination of domestic and import regulations designed to protect both the production base and the confidence of consumers in the marketplace.

Historically, food quality and food safety regulations have been implemented largely by means of **product standards**, involving the examination and testing of the product itself. Little regard has been given to the means of production, the conditions in the region of origin, or developments along the supply chain. The product standards method of regulation has the merit that it can be carried out either at the point of entry into the marketing chain or at the border in the case of imports. The multilateral trade system implicitly recognizes the advantages of product-based regulations, as it emphasizes the need to avoid discrimination both among suppliers and between imports and domestic

² The FDA is a part of the Department of Health and Human Services.

³ Fostering this concern and policy change was the publication of Rachel Carlson's 1962 book, *Silent Spring*, which postulated the adverse effects of certain agricultural chemicals, such as DDT, on both the environment and health.

⁴ Several other agencies are involved in food safety regulation. For example, the Customs Service, now a part of the Department of Homeland Security, is responsible for border inspection; fisheries are regulated by the National Marine Fisheries Services (NMFS), a part of the Department of Commerce; and others.

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production of “like products.” So for many years, product standards were seen to be the most appropriate and effective means of ensuring that imported and domestic goods were equally safe and the relative lack of information about conditions in the producing country was not an issue.

In contrast with product standards, **process standards** specify the steps and procedures that are to be utilized along the supply chain to minimize the occurrence of food safety problems. This alternative method of applying regulations has emerged in the past two decades. It emphasizes the method of production or processing rather than the nature of the product itself at a point in the marketing chain. In part this is a matter of convenience: from a practical perspective, it has been found that the safety and security of the food supply can often be more effectively and efficiently protected by managing or regulating the practices utilized in producing, handling, processing, or marketing agricultural products. The development of supply chains whereby retailers in developed countries contract with suppliers in other countries has both facilitated and required such information about production and handling conditions.

The growth of process standards poses some challenges to the trade system. Specifically, the classification of goods that governments adopt for the purposes of recording and taxing imports relies on the characteristics of the product and rarely differentiates by method of production. Moreover, the notion of nondiscrimination is difficult to apply when goods are differentiated by production technique.⁵ However, consumers are becoming increasingly interested in attributes that are apparently linked to the production method. So the use of process standards is on the rise, not only as a convenience for testing for health hazards but also to provide information for consumers. This inevitably involves the private sector, for which the satisfaction of consumer demands is commercially beneficial.

When looked at in the above context, the major changes in the set of standards that apply to agricultural and food products can be summarized as a growth in the use of process standards and the increasing involvement of the private sector in the setting of standards. But these two are connected: private standards are predominantly process-oriented. And as public standards are often administered through trade groups, the distinction between public and private is becoming blurred. So the emerging new world of standards is a mix of public and private use of both product and process standards to achieve an expanded range of objectives. There are differences of opinion over how involved governments should become in the setting of process standards and whether these standards should be public or private. The following section attempts to clarify these developments by looking at the basic choices that confront the regulator or the group establishing a private standard.

Product and Process Standards

The regulatory use of **product standards** can be visualized as having two main objectives (Figure 1):

⁵ The problem in a WTO context of identifying “like products” is by no means simple: is likeness a consumer concept or one that relates to the composition or history of the product.

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- A quality component serves as marketing aids to product price discovery, to trading, to price reporting, and as aids avoiding consumer deception and to rational consumer decisions. In the United States these product standards, whether they are grade standards; identity, quality, and fill standards; or ingredient and nutrition labeling standards, and are generally provided by regulators as a public good. Private firms use their own product standards as needed to maintain or enhance brand reputation. Laws exist to protect usurpation of such brand reputations.
- A safety component, based on product content, is designed to protect the safety and security of the food supply. Content in this context includes the presence of pathogens and additives harmful to the health of plants or animals, including humans. In addition to having quality components, some food content standards may also have safety components for certain consumer dietary needs, including ingredient labeling that requires that processed foods indicate the ingredients contained in the product and nutrition labeling standards that require that the nutritional attributes of products be explicitly stated for use by consumers.

The area of overlap shown in Figure 1 between the product quality and safety objectives represents the fact that the appearance of a product in terms of blemishes, color, feel, smell, or content may be indicators of the safety of the product and its fitness for consumption as well as criteria for grading.⁶

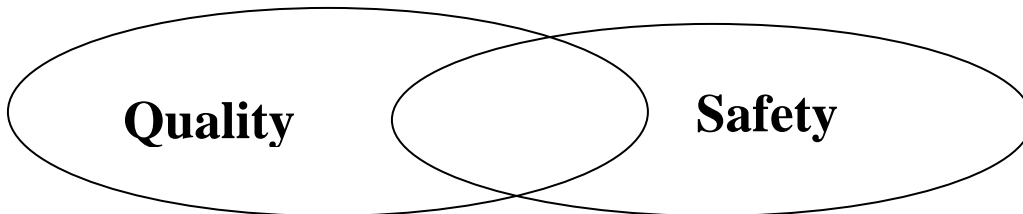


Figure 1. Visual representation of overlapping objectives of product standards.

The rise in the use of **process standards** has a number of causes. From a health and safety perspective, the leadership for developing process-based standards was provided by the processed foods industry. The need to control food-borne illnesses in the low-acid canned food industry caused this industry to aggressively pursue the development of such standards. One of the incentives came from the need to assure a safe food supply for the

⁶ It is important to note that product standards, whether relating to quality or safety, are generally only tested on product samples, and there is substantial debate over the level of sampling and tolerance that is acceptable to the public. In the case of safety, zero tolerance for certain pathogens is becoming more common. The setting of parameters for sampling and tolerance has made risk analysis a prerequisite to the setting of standards.

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NASA astronauts.⁷ Out of these initiatives grew the now widely used Hazard Analysis Critical Control Point (HAACP) science-based approach to assuring a safer food supply. Initially adopted by the FDA nearly 30 years ago, it was mandated in 1997 to be used by the USDA's Food Safety Inspection Service (FSIS) in slaughtering plants (FDA Backgrounder).

The HACCP risk assessment approach to food safety provides a good example of a process standard. A typical HACCP regime for food safety involves the following seven process-based and science-based steps (FDA Backgrounder):

- Analyze the potential food safety hazards.
- Identify critical control points at which the potential hazard can be controlled or eliminated.
- Establish preventive measures with critical limits for each control point.
- Establish procedures to monitor the critical control points.
- Establish corrective actions to be taken when monitoring shows that a critical limit has not been met.
- Establish procedures to verify that the system is working properly.
- Establish an effective recordkeeping to document the HACCP system.

The last of these steps emphasizes a further benefit of a process approach. The ability to trace a hazard to its origin is becoming an important requirement for ensuring the safety and security of the food supply in plant and animal products. Moreover, it satisfies to some degree the need to apportion liability in cases where products cause damage or health problems. Thus the HACCP system is now fully entrenched in both the public and private sectors as a convenient way to ensure product safety. This comprehensive approach to biosafety has been widely adopted in other countries, leading to a significant improvement of the level of information about the origin of products and the corresponding increase in the reliability of overseas testing and certification processes.

Following the terrorism events of September 11, 2001, a new objective was added to the demand for regulations relating to food safety. The vulnerability of a nation's food system to deliberate contamination and the possible use of microbial agents to spread disease were subject to debate and speculation. Biosecurity quickly became integrated into the regulatory framework; though it has caused some tensions as a result of its potential for directly impacting trade and the transaction costs associated with trade. These potential impacts of biosecurity on trade flows have yet to be fully sorted out.

The most important driver of the switch to process standards is, however, the consumer. There is undoubtedly a growing interest among some consumers in the origin of the food that they buy. In order to match this demand to enhance the retail acceptability of the food supply, standards are being developed that extend far beyond efforts to assure

⁷ Low-acid canned foods are particularly subject to biocontamination such as botulism, and the need to have a safety food supply for astronauts in space travel was a high priority because of the lack of ready access to medical care.

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biosafety and biosecurity. These new and often controversial demands relate to societal expectations regarding how food should be produced, which may or may not be related to product quality and safety and may be more a matter of perception than of science. These demands are referred to in this paper as **lifestyle** demands, expectations, or objectives. These diverse demands add an additional circle in Figure 2 (relative to Figure 1), which encompasses this broader set of societal objectives (or at least those of advocacy groups) such as those involving animal welfare, fair-trading, local sourcing, organic farming, and the avoidance of genetically modified organisms (GMO).

Of course, there are some overlapping issues, as shown in Figure 2. Some lifestyle standards (the definition of organic foods, for instance) may be useful in signaling both quality and safety attributes, though this is the source of considerable contention. In the context of Figure 2, this determines the magnitude of the overlap. Consumers may demand standards that are both quality and lifestyle related but have little to do with safety. Others attempt to signal safety and lifestyle choices but not quality in the grading sense. Other standards that enable one to pursue lifestyle choices, such as animal welfare regulations, may barely touch on issues of quality or safety. In this case, there would be little or no overlap between the safety and lifestyle ovals in Figure 2. The point is that lifestyle demands may be largely perception-based, rather than being science-based.⁸ As a result, they have increasingly become the subject of considerable private-sector advertising and promotion supporting these perceptions and their development. Consumers expressing these lifestyle choices through the market tend to be more affluent, reinforcing the advantage of labeling and product differentiation that emphasizes the desirability of these products.

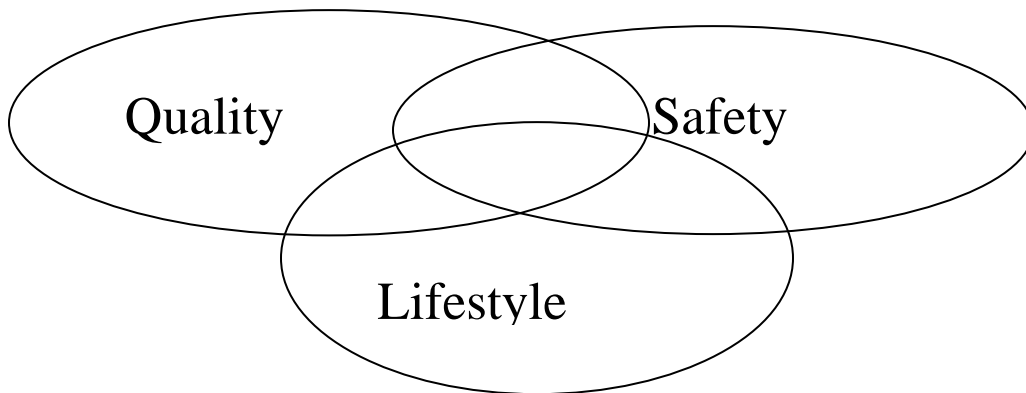


Figure 2. Visual representation of the objectives to be achieved by process standards.

⁸ The implication is that the amount of overlap has important implications for the resolution of SPS trade disputes arising in WTO, as will be discussed subsequently.

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Private and Public Process Standards

As suggested by the previous discussion, process standards are being initiated by both the public and the private sector. Many different levels of cooperation and competition are developing within and between the private and public sectors to define workable roles. This section discusses briefly some of the most significant sets of private standards and the public standards that have emerged at the international level.

Private process standards have always been present in the food industry but have been developing rapidly in recent years.⁹ These standards are set by the firms themselves as part of their branding strategies and quality control measures. More recently, multi-firm standards are being developed, agreed upon, and implemented through the specification of a set of good agricultural, handling, processing, or management practices. The specification of these practices is determined by the combination of quality, safety, and lifestyle objectives to be achieved. In general, the specification of standards that relate predominantly to health and safety issues are left to the public sector but, once specified, these public sector health and safety standards may be incorporated into private standards.

Private sector standards are put in place by private firms and/or by associations of which these private firms may be members. In general, the private sector desires to have as much influence and control over the setting of these standards as possible. Most private sector businesses would prefer to minimize the extent to which government entities direct how they run their businesses. If there is a need for government involvement, the private sector would prefer that the government act more as a facilitator in helping to set up the rules of the game and as an auditor or third party inspector than as a regulator. In addition, as noted previously, aggressively innovative private sector firms will seek to establish proprietary process standards that fit their domestic and global supply chains and increasingly are including lifestyle attributes as a part of that strategy (Reardon and Flores, 2006; Lange and Reardon, 2007).

- **International Standards Organization (ISO).** ISO is a principal voluntary global leader in the establishment of guidelines for the establishment of private sector standards. ISO seeks to promote a “free and fair global trading system” by providing the management control underpinnings for quality, technical procedural, safety, management, and environmental process standards. The primary beneficiaries are purported to be consumers, workers, businesses, and the general public. However, one assumes that governments also derive some benefit from the ISO’s establishment of private sector guidelines in standards setting.

These ISO standards also are designed to be consistent with and to facilitate compliance with multilateral rules in the SPS and TBT agreements within the WTO. But in contrast to the multilateral standard-setting bodies mentioned below, the ISO has no special relation to either the NAFTA or WTO SPS provisions. However, with widespread acceptance of ISO quality management standards and the increased importance of environmental regulations in international agrifood trade, the ISO has

⁹ For example, the processing of products to the specification of buyers is not new.

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become an important part of the global standards environment and may need more explicit recognition by regulators.

For food industries, the key ISO standards are contained in ISO 9000, which has become an international reference for meeting generic quality management requirements in business-to-business dealings. This includes achieving increased uniformity in meeting the customer's quality requirements, in meeting applicable regulatory requirements, in enhancing customer satisfaction, in ensuring food safety, and in achieving continual improvement of its performance in pursuit of these objectives. In addition, ISO 14000 is designed to assist businesses in meeting their environmental challenges, while not restraining trade. Specific attention is given to establishing uniform international standards designed to minimize harmful effects on the environment caused by business activities, and to achieving continual improvement of environmental performance (ISO, 2007).

Among the more specific management codes related to the food industry are the following “good practices” specifically related to the issue of biosafety:

- **Good agricultural practices (GAP)** indicate the practices that are to be followed by farmers/growers in producing agricultural products. Such practices can relate to the inputs (such as chemicals or fertilizer) utilized in production, water utilized for irrigation, control of runoff from adjoining fields/property, and the availability of hygienic facilities to farm workers in production processes up to harvest.
- **Good handling practices (GHP)** indicate the practices that are to be followed in harvesting products and in post harvest for products that are not processed (such as fresh fruits and vegetables). These include the availability of hygienic facilities to farm workers in harvesting or handling products, the utilization of sanitary practices, the quality of water utilized to cleanse products, any chemicals and heat treatment utilized in handling or treating fresh products, the composition of packing/packaging containers, and transportation of products from the farm to retailer. It also includes provisions for being able to trace the origins of the products back to specific or at least areas of production farms.
- **Good processing practices (GPP)** indicate the practices that are to be followed in processing. As noted previously, HACCP has been widely applied as the process standard for products that are changed materially in form. However, the scope of what constitutes processing is expanding as, for example, fresh fruit and vegetable products are placed in ready-to-use packages. In addition to the processed products for which HACCP process standards exist (low acid canned foods, juice, seafood, meat, and poultry), there are issues of requirements for broader application to all processed products, including requirements for traceability.
- **Good management practices (GMP)** relate to the responsibilities placed on management to see that control systems are in place to assure that products are safe and secure. The use of the GMP terminology appears to be more common when applied to the total business operation and to biosecurity issues.

Taking this model further, many companies have cooperated in developing a broader application of standards. These standards, referred to by the acronym **Global GAP**, are

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developed to mesh with those of the international organizations, as well as with the standards of countries in which they are marketing. The goal of Global GAP is that all supplying businesses meet these process standards regardless of their country of origin. Consequently, Global GAP would inevitably tend to conform to the requirements of the country having the highest level of food quality and safety regulation, on the assumption that it would meet the requirements of each of the other countries.

Public sector standards are established by a legal process at the state, federal, or international levels. They may be voluntary (recommended) practices or mandatory (required) practices. Issues of food safety and plant or animal disease prevention and control are more likely to involve mandatory standards. But mandatory standards are difficult to translate to the multilateral level, as individual regulatory authorities are reluctant to give up their own autonomy. However, national autonomy can lead to the use of regulations and standards as barriers to trade. This reality led to a number of international food, plant, and animal protection organizations becoming involved in ensuring that the content of process standards has a base in science.

In 1995 the establishment of the World Trade Organization (WTO) strengthened international rules designed to discipline the regulatory measures that countries adopt to achieve *legitimate* food safety and food quality goals. These rules oblige all WTO members to adhere to certain criteria in formulating their domestic and trade regulations. In doing so, they promote coherence both among domestic policies and between such policies and international standards. In the case of food safety, the Agreement on Sanitary and Phytosanitary Measures (SPS Agreement) required governments to apply such measures “only to the extent necessary to protect human, animal, or plant life or health,” to base them “on scientific principles”, and not to maintain them “without sufficient scientific evidence.”¹⁰ In addition, measures should be formulated to achieve their objectives in the least trade-distorting manner. In the case of quality goals, the Agreement on Technical Barriers to Trade (TBT Agreement) requires that such measures be appropriate to the objective of the regulation and also be the least trade-distorting. These new disciplines were backed up by the dispute settlement process of the WTO (Josling, Roberts and Orden).

The justifications for regulatory coordination among countries and international oversight of national regulation stem from both the public goods aspects of disease and pest control and the opportunities to reduce market transactions costs for firms and consumers. By striving for more coherent decision-making among themselves, countries can influence the conditions under which international trade is conducted and thereby address trade-related risks, improve product information, and foster welfare-enhancing transactions.

Process standards are more difficult to implement internationally than product standards because they involve complex verification and enforcement procedures by private firms or regulatory institutions in two or more countries. Trade problems can arise from lack of trust in the regulatory processes across borders, inadequate public-sector enforcement capacity in some countries, and differences in accountability imposed on domestic and

¹⁰ WTO SPS Agreement, Article 2:2. There is a partial exception to the “scientific evidence” requirement in the case of temporary measures where such evidence is not available (Article 5:7).

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foreign products. Firms in developing countries are likely to have difficulty meeting food regulatory and traceability requirements imposed by the process standards of developed countries. Yet disagreements over process standards also arise between high-income countries with high regulatory standards and enforcement capacity (Josling, Roberts and Orden).

Concerns with public enforcement of process standards could become even more prevalent in the future. The level of government at which initiative is taken, depends on the geographic scope and severity of the problem. For example, BSE (mad cow disease) in the Western Hemisphere rapidly transitioned from a European to a Canadian problem and then to a bi-national problem including the United States (Caswell and Sparling, 2005; Sparling and Caswell, 2006). In reality, BSE, like most other animal and plant diseases, has the potential for being global in scope. Hence the need exists for a sophisticated and reliable framework at the multilateral level to underpin national and regional safety standards.

Multilateral standard-setting organizations are important, not only from the perspective of assuring a safe and secure food supply, but also in reducing the potential for process standards becoming barriers to trade. The relevant international standard-setting organizations in the food and agricultural sector include:

- **Codex Alimentarius Commission (CODEX).** CODEX develops internationally recommended food standards for protecting health of the consumers, ensures fair trade practices in the food trade, and promotes coordination of all food standards work undertaken by international governmental and nongovernmental organizations. These standards are designed to create greater uniformity in product safety, grading, labeling, packaging, and content, thereby avoiding sanitary and phytosanitary (SPS) as well as technical barriers to trade (TBT). CODEX is one of the main international groups establishing process standards affecting the safety of food products; although the other organizations also play an important role in each of their areas of specialization. The food safety activities of CODEX have resulted in increased efforts to coordinate its standard-setting process with OIE (CODEX, 2007 and OIEa, 2007).

CODEX took the lead in the recommendation of HACCP for adoption by each of the following of the international standard setting organizations. It is increasingly being recommended in farm-to-table biological control systems extending from farm production through retail food outlets including retailers, delis, fast-food operators, and restaurants. Its expansion for farm-to-table use throughout NAFTA would be a major step forward in not only reducing food-borne illness, but it would also be an important common policy instrument that would serve as a major step in the direction of compatibility, if not harmonization, of SPS regulations to reduce barriers to trade.

- **World Organization for Animal Health (OIE).** OIE (Office International des Epizooties) is responsible for safeguarding world trade by publishing health standards, based on veterinary science, for international trade in animals and animal products. The main activity of OIE is the maintenance of terrestrial and aquatic animal health codes. The aim of the key *Terrestrial Animal Health Code* is to

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assure the sanitary safety of international trade in terrestrial animals and their products. This is achieved through the detailing of health measures to be used by the veterinary authorities of importing and exporting countries to avoid the transfer of agents pathogenic for animals or humans, while avoiding unjustified sanitary barriers (OIEa, 2008). A key issue in determining the urgency of control measures is whether the animal disease is transmittable to humans, referred to as zoonoses, either from live animals or from animal products. Hazard Analysis Critical Control Point (HACCP) is a highly recommended process standard recommended by OIE for preventing food borne illnesses.

- **International Plant Protection Convention (IPPC).** IPPC prevents the spread and introduction of pests of plants and plant products by promoting appropriate phytosanitary measures for their control. IPC establishes International Standards for Phytosanitary Measures (ISPMs) that are designed to control the spread of plant diseases and pests while maintaining channels of trade that are as open as is feasible. Most plant diseases and pests do not threaten either humans or animals, although they have the potential for adversely affecting food and fiber production, which has implications for food and fiber availability and cost (IPPC, 2008). In addition, instances of biological contamination of fruits and vegetables, such as spinach, cantaloupe, raspberries, and strawberries, have led IPPC to giving greater attention to the application of control measures, such as HACCP, and to working with CODEX and OIE in their adoption.

Searching for the Right Mix

National food markets are highly integrated through global trade and investment. A multilateral framework for achieving coherence and complementarity among national standards for ensuring food safety has been established through the WTO. The SPS agreement contains specific principles to guide domestic regulation of food safety. These include transparency, allowing ready access by traders to the detailed regulations that they face; the use of science-based risk management; and the adoption of harmonized, equivalent, and regionally differentiated standards. The Technical Barriers to Trade (TBT) agreement likewise encourages transparency and promotes coordination of national regulations and standards through adoption of international norms.

Greater reliance on process standards places more responsibility on the regulatory infrastructure of the exporting country than on border inspection in the importing country. This trend in quality regulation is leading to increased use of private, third-party certification services in the food sector, especially within countries lacking satisfactory public certification infrastructure. These and other alternative certification options should be but one manifestation of a broader commitment by national food quality regulators to open and contestable markets that genuinely serve consumer interests (Josling, Roberts, and Orden).

Increasingly, private-sector promulgated standards, together with private supply chains of international scope, are increasingly important in determining food market access (Hensen). Yet nations remain the principal authority in almost all dimensions of their food regulation and standards. So the nature of the public-private relationship is crucial to the effectiveness of regulations. However, the public and the private sector have very

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different motivations in their standard setting. One aspect of private standards, the minimization of risk for consumers (and the costs of litigation), is shared. But generally, the public sector is not actively involved in boosting demand and even less often in increasing market share for some particular actor (Josling, Roberts, and Orden).

In general, domestic food regulations are the most appropriate instrument for risk-related goals. By contrast, measures undertaken voluntarily by the private sector—albeit with varying and sometimes significant degrees of government involvement, including prosecution of deceptive claims—is the preferred approach for food quality goals. The global food system is best served when domestic regulations are used predominantly for risk reduction and only sparingly to *govern* food quality.¹¹ The governance of food quality is more diffuse than that for risk because a greater proportion of food quality measures are both established and enforced by the private sector. It is the market, rather than the government, that is likely to be the more agile institution for accommodating a wide range of continually evolving consumer preferences.

Several issues remain under consideration in the process of achieving the optimal mix between public and private standards. Most of these arise from the growth of process standards. Among these issues are:

- What is the appropriate use of HACCP approaches in the food supply chain? Should HACCP be applied to each level? Are the GAPs an acceptable alternative to HACCP at the production level, or are they complementary to it?
- How should the traceback provisions necessary for quality control and liability issues be linked with promotional activities highlighting the method and location of production? To ensure food safety, effective process standards demand increased requirements for traceability. At the same time there is a question of how much information consumers can effectively utilize on the life history of a complex product?
- How should one avoid the danger that process standards will become significant barriers to trade in violation of WTO? There is still a preference within the WTO system for product standards, but this is being modified as the reality of process standards is more evident. Process standards place increased burden on the ability of regulators to determine which aspects are science based versus those aspects that may constitute unnecessary barriers to trade.
- How can the roles of the private and public sector in implementing process standards be made more complementary? Do market participants and consumers have enough confidence in private standards to allow public standards to concentrate on public health and safety issues?
- What comparative impacts do process standards have on developed versus developing countries? Is the spread of such standards biased against developing country exporters? Or does it give some of them a significant market access edge

¹¹ The term “govern” is as it relates to food quality is perhaps controversial. In this context it is not meant to exclude government actions that reduce transaction costs by facilitating greater uniformity in terms of trade, reducing unfair or disruptive trade practices, and aiding in price discovery.

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over competitors unwilling to be subject to these exacting standards? Process standards place increased burdens on the private sector to develop more sophisticated supply chains. This burden increases geometrically as one moves from developed country supply chains involving larger-scale producers to less developed country supply chains involving many small farmers.

Implications for NAFTA

The NAFTA Agreement itself predated and presaged the WTO in the treatment of health and safety issues. A NAFTA SPS provision is incorporated in the Agreement, and an SPS Committee was established. But much of the significance of this was subsumed in the WTO Agreement described above. However, the possibility of NAFTA moving ahead in the area of standard setting is enhanced by the fact that considerable experience has been gained by discussions at the trilateral level. Moreover, extensive cross-border investment in the food and agricultural sector has made the notion of coherence and collaboration more plausible. This combination of public and private activity is illustrated in Figure 3 for the NAFTA countries. NAFTA could provide an excellent test case for an attempt to achieve a constructive balance between public product standards and private process standards.

So the key question is what role NAFTA should have in setting or influencing the process standards set by the private or public sector in its member countries or in having a unified position regarding international standards? Is there a leadership role to be played by NAFTA or is that role to be left to other blocs such as the European Union (EU)? Quite, clearly, the EU supranational structure is more conducive to such a leadership role. However, as noted previously, the leader in developing the higher-level process standards is likely to have the greatest impacts on Global GAP standards. Maybe there is a greater coordinating role to be played by international organizations such as CODEX.

The public-private nexus is a long-run problem for the Americas, because it is unlikely that the dominance of supermarkets in food retailing and large multinationals in processing and distribution is on the wane. The use of pseudo-risk discourse in defining quality, and promotion of the association between production methods and significant attributes at the consumer level, pose a particular challenge for the public sector. The more that the private sector, whether leading or following consumer tastes, establishes standards that appear to overlap with health and safety considerations that are the responsibility of the public regulatory authorities, the greater is the risk of conflict and confusion.

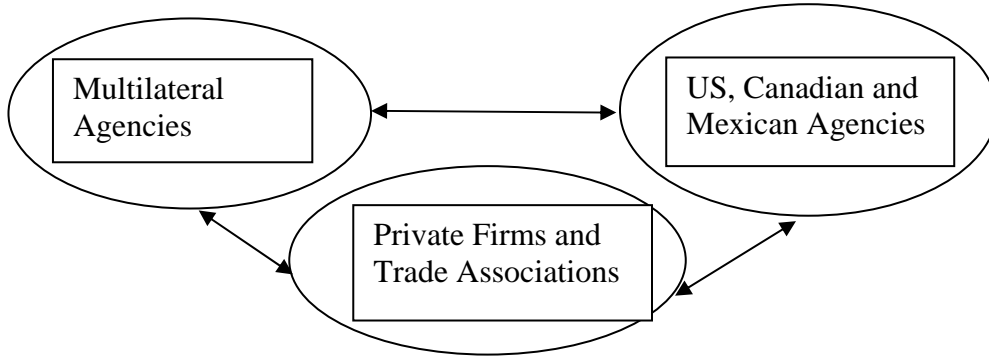


Figure 3. Interaction of private and public sector to form NAFTA process standards.

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References

Breimyer, H. (1976) *Economics of Product Markets of Agriculture*. Iowa State University Press. Ames, IA. Pp.138-44.

Carlson, Rachel (1987) *Silent Spring*. Houghton Mifflin Publishing Co.; (originally published in 1962).

Caswell, J.A. and D. Sparling. 2005. "Risk Management in Integrated NAFTA Market: Lessons from the Case of BSE." In: Huff, K.M., K.D. Meilke, R.D. Knutson, R.F. Ochoa, and J. Rude (eds). *North American Agrifood Market Integration: Current Situation and Perspectives*. Proceedings of the Second North American Agricultural Market Integration Consortium Workshop. Texas A&M University. University of Guelph. IICA.

CODEX (Codex Alimentarius Commission) (2008) Available at:
<http://www.codexalimentarius.net>

FDA Backgrounder. (2008) HACCP: A State-of-the-Art Approach to Food Safety. Available at <http://www.cfsan.fda.gov/~lrd/bghaccp.html>

FDA (2008) Requirements for Food Standards. Available at
<http://www.cfsan.fda.gov/~dms/qa-ind2d.html>

Henson, S., 2006. The Role of Public and Private Standards in Regulating International Food Markets. Presented at the International Agricultural Traded Research Consortium symposium on Food Regulation and Trade, Bonn, Germany, May.

IPPC (International Plant Protection Convention) (2007) Available at:
<https://www.ippc.int>

ISO (International Standards Organization) (2007) Available at: <http://www.iso.org>

Josling, T., Roberts, D., Orden, D., (2004). *Food Regulation and Trade: Toward a Safe and Open Global System*. Washington D.C.: Institute for International Economics.

Knutson, R. and R. Ochoa. (2007) *Status of agrifood regulatory coordination under the North American Free Trade Agreement*. ECLAC Studies and Perspectives Series. ECLAC Washington Office, United Nations. ISSN-1727-9909. Available at
<http://www.eclac.cl/cgi-bin/getProd.asp?xml=/publicaciones/xml/8/32268/P32268.xml&xsl=/washington/tpl-i/p9f.xsl&base=/washington/tpl-i/top-bottom.xsl>

Knutson, R., J.B. Penn, B. Flinchbaugh, and J. Outlaw. (2007) *Agricultural and Food Policy*. 6th edition. Pearson Prentice Hall. pp. 142-6.

Knutson, R. and T. Sporleder (2007) "USDA Marketing Programs in Retrospect—Implications for the Future." American Agricultural Economics Association Senior Section Symposium. Portland, Oregon. July 29, 2007.

Lange M., and T. Reardon (2007) "Learning to Compete in Dynamic Food Systems: Elements for Successful Supply Chains in CAFTA-DR." Transition to CAFTA-DR. CAMIC Workshop I. San Jose, Costa Rica, Available at:
http://camic.tamu.edu/sanjose/lundy_english.pdf

Draft

OIE (World Organization for Animal Health) (2008) Available at: http://www.oie.int/eng/en_index.htm

Reardon, T. and L.Flores. (2006) Viewpoint: "Customized Competitiveness" strategies for horticultural exporters - Central America focus with lessons from and for other regions," *Food Policy*, Elsevier, vol. 31(6), pages 483-503, December.

Sinclair, U. (1906) *The Jungle*.. Doubleday, Page & Co.

Sparling, D. and J.A. Caswell. (2006) "A NAFTA Approach to Animal Health and Biosecurity: Pipe Dream or Possibility." In Huff, K.M., K.D. Meilke, R.D. Knutson, R.F. Ochoa, and J. Rude (eds). *Agrifood Regulatory and Policy Integration Under Stress*. Proceedings of the Second North American Agricultural Market Integration Consortium Workshop. Texas A&M University. University of Guelph. IICA. Available at: http://naamic.tamu.edu/sanantonio/agrifood_regulatory_and_policy_integration_under_stress.pdf