International
Food & Agricultural Trade
Policy Council

Tracking the Implementation of Internationally Agreed Standards in Food and Agricultural Production

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*This policy brief serves as a background paper for a seminar on non-tariff measures which IPC and the OECD are holding on September 13, 2011: "**Non Tariff Measures on Food and Agricultural Products: The Road Ahead.**" Donna Roberts is the Chief, Food & Specialty Crops Branch at the Economic Research Service of USDA. Tim Josling is Senior Fellow at the Freeman Spogli Institute for International Studies, Stanford University, and a Professor Emeritus at Stanford's Food Research Institute and he is an IPC member. The views expressed herein are those of the authors, and may not be attributed to the Economic Research Service or the U.S. Department of Agriculture. A draft of this paper was presented to IPC members, and the authors gratefully acknowledge their comments.*

Introduction

One of the key principles of the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) of the World Trade Organization (WTO) is to urge countries towards greater harmonization of health and safety standards. The Agreement's endorsement of harmonization stems from repeated complaints by exporters that complying with divergent SPS measures substantially increases the transaction costs of trade. One way to accomplish harmonization is to make use of international standards (IS). Countries have agreed to this in principle: the SPS Agreement's Article 3 states that "Members shall base their SPS measures on international standards, guidelines or recommendations…where they exist" and provides for a presumption of consistency with WTO commitments if countries' measures conform to international standards agreed in the three international standard-setting bodies, referenced in the Agreement: Codex Alimentarius, the International Organization of Epizootics (OIE), and the International Plant Protection Convention (IPPC). Members are allowed to introduce SPS measures which result in a higher level of protection than would be achieved by measures based on international standards. Countries are permitted to adopt a measure that provides "an appropriate level of protection" as described in Article 5 of the Agreement, if there is scientific evidence in support of the claim that the measure achieves this level, as per Article 3.

To what extent has this encouragement of the use of IS been successful? According to Josling, Roberts and Orden (2004), the WTO's promotion of harmonization has been less successful than its attempts to increase transparency or require that measures be based on a risk assessment. The authors report that early assessments indicated a low adoption rate of international standards. They cite two possible considerations that might account for this: a lack of international standards in many areas of trade and outmoded standards that do not fill the requirements of countries, possibly reflecting underinvestment in the development of international standards.

The WTO has accumulated some additional evidence about adoption of international standards in recent years. A provision of the Agreement, Article 3.5, tasked the WTO Committee on SPS Measures to develop procedures to monitor the process of international harmonization, and to coordinate efforts with the relevant international organizations to develop targeted remedies for identified problems. How has this provision been implemented, and

** The authors gratefully acknowledge the research assistance of Veronica Pozo. We thank Gregg Young and Lee Ann Jackson for their helpful comments and suggestions on this report, and absolve them of any responsibility for any remaining errors.*

have the mechanisms been effective? Are additional efforts required by the WTO, or are alternative approaches needed for a more complete understanding of harmonization to provide a foundation for improving the use and utility of international standards going forward?

This paper will examine the available evidence collected by the WTO on the adoption of international standards through the Article 3.5 procedures as well as that available through other reporting and monitoring mechanisms. It will advance recommendations as to which efforts hold the most promise and what should be the structure of such monitoring. These recommendations are made more pertinent in light of the substantial increase in the use of private standards since the SPS Agreement came into effect, raising fundamental questions about the respective roles of the public and private sectors in generating, implementing, verifying, and enforcing domestic and international standards to facilitate welfare-enhancing trade.

Adoption of International Standards

The SPS Committee initially adopted a provisional procedure in 1997 to encourage and notify the use of international standards in accordance with Article 3.5. The procedure entails WTO members identifying specific trade flows that could be increased by the development of an international standard, to be followed by a report from the standard-setting organization on how it had addressed the issue. Both developed and developing countries have used this mechanism, according to annual WTO reports, and the standards organizations have met their commitment to provide prompt responses.[1] According to these same reports, however, individual members used this procedure just eighteen times over the 1997 – 2008 period; in some years, members did not use it at all (WTO various years). Moreover, many of the identified issues (for example, standards for sulphur dioxide in cinnamon), would likely have limited impact on global food markets regardless of the speed of development and adoption of a standard. This record led the WTO Secretariat to conclude that there had been "sparse use of this mechanism" (WTO 2006, p.2) and to recommend small adjustments to the procedure to increase its use.

The formal review of the SPS Agreement which the Committee undertakes each three to four years provides another monitoring mechanism for assessing progress on harmonization. During the course of the most recent review, India noted that ". . . it is still difficult for members to assess the degree of harmonization of various SPS measures imposed by different members with the relevant international standards" (WTO 2009a, p.2). Developing countries in particular are concerned that even though fifteen years have elapsed since the SPS Agreement came into force, adoption of international standards has not been widespread enough to provide an effective platform for increasing market access as they had hoped. Moreover, they have expressed concerns that even when international standards are adopted in high-income countries, increasing use of private standards in effect nullifies expected market gains. The Southern Common Market (*Mercado Común del Sur),* better known by its acronym, MERCOSUR, for example, reported concerns about private standards "based on commercial quality schemes and a non-scientific and market approach" (WTO 2009b, p.1). One measure of dissatisfaction with the *status quo* is the long list of recommendations to promote harmonization that emerged from the Committee's review (WTO 2010a).

One option for developing a more comprehensive overview of harmonization beyond what has come to light under Article 3.5 or in the Committee's formal reviews entails capitalizing on the information collected from members under the transparency provisions of the Agreement. These provisions are intended to establish a framework for determining the legitimacy of SPS measures that restrict trade and for resolving potential trade conflicts. Transparency is achieved by "notifications" (to the WTO) of proposed changes in regulations that could affect trade. The information contained in these notifications is intended to enable judgment about the purpose or design of a measure, and consequent effects on specific trade flows. One item on the notification asks members to indicate whether an IS standard exists that is relevant to the notified measure, and if so, to identify it (for example, a Codex standard number).

1 Notifications that are made to the SPS Committee are available as WTO documents under the G/SPS/N series: reports by the SPS Committee are found under the G/SPS/W series.

Members are also asked to indicate if the notified measure conforms to the IS, or describe how it deviates from it (WTO 2008a).[2]

The WTO Secretariat began providing summary overviews of all of the information contained in the notifications in 2007 as a means of monitoring compliance with the Agreement's transparency obligations. A recent report notes that over the period June 2007 through August 2009, 57 percent of notifications indicated that international standards had not been used (WTO 2009c). This paper takes a closer look at notifications submitted by WTO members over the 2006-08 period to provide a snapshot of the recent pattern of the use of international standards following the first full decade of implementation of the SPS Agreement. Drawing out the implications of this pattern requires an examination of the variation across countries, products, and the objective of the notified measures to ascertain potential effects of harmonization on agri-food trade and where improvements may be warranted.

WTO members submitted 2,340 notifications to the SPS Committee over the three-year period, with 36 percent indicating adherence, in full or in part, to an international standard. Nearly 59 percent of notifications indicated that no international standard existed with the remaining 5 percent leaving this question blank.[3] This finding supports the conclusion of earlier studies that the use of international standards has remained low despite the endorsement and encouragement of the WTO. But this is not true for all groups of countries. When compared across country income groups, the lowest proportional adoption of IS occurs in the high-income countries, with barely 300 out of over 1300 standards harmonized: an overall adoption rate of 22 percent (Figure 1). Upper middle income countries have notified about one half as many standards but a much larger proportion (45 percent) of these standards conform in whole or in part with IS. Lower-middle income countries make by far the greatest use of international standards, with an adoption rate of 76 percent.[4]

The use of IS varies with product group as well as by income level. Table 1 maps the identified trade flows affected by the notified measure into product categories as defined in the Harmonized Commodity Description and Coding System (HS) of tariff nomenclature of the World Customs Organization. More than half of the notifications in two product categories indicated adoption of IS in whole or in part: Animals and Animal Products, and Animal Feed. However, the proportion of notifications indicating adherence to IS fell to about one-third for two other important categories in international agri-food trade, Cereals and Oilseeds and Vegetables, Fruits, and Nuts. The proportion of notifications in the Multiple and Miscellaneous Products category, which accounted for more than one-half of the total notifications, was similarly low at just over 30 percent.[5]

There is substantial variation in the rate of adoption of international standards across the five categories of regulatory objectives, as well (Table 2). The lowest proportion of notifications signifying adherence to international standards are in the Food Safety category, with fewer than one in four indicating adoption of Codex standards in whole or in part. The second lowest category, Protection of Humans from Animal and Plant Pests and Disease, is, like Food Safety, related to human health. The percent of notifications in the categories of Plant Health (31) and Animal Health (53) correspond to the rates of adoption by related product categories. The highest degree of harmonization is in the adoption of environmental measures in the Protect Territory category.

2 Notification requirements have been amended twice since 1995, but members have been queried about the existence and conformity with international standards in varying degrees of detail since the inception of the SPS Agreement. The SPS Agreement does not require members to notify a measure if its content is substantially the same as an international standard, but in practice the countries that submit the large majority of the notifications, in particular the United States which alone accounts for nearly a quarter of the notifications, have done so.

3 These statistics include only notifications of "regular" measures, excluding notifications of emergency measures, addenda, and corrigenda.

4 Interpretation of the use of international standards by low-income countries is complicated by the fact that relative few measures have been notified to the WTO over this three-year period.

5 Notifications related to "Multiple Products that spanned two or more HS categories at the 2-digit level were often those related to pesticide residue limits on a wide range of identified products. "Miscellaneous Measures" includes those that did not explicitly identify products or product categories, or notified measures related to infrastructure and enforcement such as surveillance protocols, diagnostic laboratories, and phytosanitary certificates.

Implications for Global Trade in Foods

It is difficult to determine the effects of adoption of IS on international agri-food trade based on the current monitoring systems set up by the WTO. The Article 3.5 monitoring mechanism has been rarely used by members, as noted above. The periodical reviews of the SPS Committee have yielded anecdotal evidence about the ramifications of the *status quo* on harmonization for developing countries, but provide little guidance for targeted actions by the WTO or the international standards organizations. Notifications are perhaps the best source of information currently available to gauge the effects of harmonization in global food trade, but they provide only the most rudimentary information about the number and type of measures, and affected trade flows. Consequently, findings based on notifications employed as a metric of harmonization must be interpreted with caution.

With this caveat in mind, the findings presented in the previous section indicate that after a decade of implementation of the SPS Agreement, with its concomitant obligation to promote harmonization of SPS measures through the creation and use of IS, their use over a recent three-year period was low. Moreover, IS did not exist in a significant percentage of cases. Fewer than half of the notifications from high and upper-middle income countries, which represent the most lucrative export markets for developing countries, reported use of international standards. The higher rate of use by developing countries may reflect the limited ability of developing countries to promulgate national regulations that require considerable scientific and administrative capacity. The pattern of adoption across income classes may also reflect the fact that the use of national rather than international standards can increase the cost of exports as well as imports.

The results are also suggestive of other factors determining the patterns of adoption. The variation in percentages of notifications indicating adoption of international food safety standards across income categories is consistent with the hypothesis that food safety is a normal good, with high income countries adopting standards that exceed international norms when they do exist. The higher percentages of notifications indicating adherence to international standards regulating Animal Health than for Plant Health (and concomitantly for Animals and Animal Products as compared to Edible Vegetables, Fruits, and Nuts) could reflect characteristics of the regulated product and hazards (i.e., there are fewer domesticated species and known pests/diseases for animals than plants) and/or institutional factors (i.e., OIE has been in existence longer and promulgated more standards than the IPPC).

Determining the impact of notified measures on levels and direction of trade flows would provide a more solid foundation for developing an international consensus on roles, priorities, and strategies for all stakeholders to increase harmonization. However, this task is complicated by three factors:

- *Varying dimensionality*. A single notification may contain information on a single horizontal measure affecting thousands of products; a single measure affecting large or miniscule trade flows; or multiple measures applied to significant and/or insignificant trade flows.

- *Varying stringency and incidence*. Countries are permitted to adopt measures that restrict trade if they are "rationally related" to identified risks under the terms of the SPS Agreement. In practice this implies that countries may adopt measures that ban imports while others adopt measures that impose negligible costs; measures may also apply to some but not all countries, or apply to certain regions within a single country.

- *Varying approaches for use of international standards*. Notification by countries indicating their adoption of international standard allows for "adoption with deviation" which implies scope for choice of different instruments to be employed to achieve a specific health or safety objective. And adoption of international metastandards, or general standards for risk management (for example, Hazard Analysis and Critical Control Points or HACCP), likewise still leaves scope for different measures to be used. Some of these differences in approaches can be significant enough to preclude trade rather than promote it, even though both trading partners have adopted the same international standards. For example, the results of one recent study of suggest that HACCP introduction had a negative and

significant impact on overall imports from the top thirty-three seafood exporters (Anders and Caswell, 2009).

To sum up, the current WTO reporting mechanisms make the systematic analysis of harmonization difficult at best. Among other things, this opacity complicates efforts to establish priorities for the efforts of the IS organizations that would increase market access for developing countries. Simple metrics of the extent and pattern of adoption of IS indicate substantial variation across countries, products, and regulatory objectives, yielding several hypotheses that would likely be fruitful to explore more systematically. Analyzing the implications for global trade flows is clearly important, but requires additional resources to glean, supplement, and interpret the information contained in notifications. The value of such efforts could be substantial. The development literature recognizes food safety and control of pests and diseases as global public goods, and, in some cases, international standards as instrumental in increasing their supply (Unnevehr, 2007). Moreover, the case for more data and analysis to help establish priorities for the development of international public standards is strengthened by the recognition of the exponential increase in the use of private standards in international trade in recent years.

Private Standards and Global Food Trade

The principal finding in this report, that the percentage of notifications indicating adherence to international standards over a recent three-year period is low primarily because no international standards reportedly existed for the product, may provide at least a partial explanation for the recent growth in the use of private standards as benchmarks in global food trade. Business-led initiatives such as the Global Food Safety Initiative (GFSI), which currently recognizes seven major food safety schemes, are gaining ground.[6] Use of these global benchmarks is growing rapidly, and now includes major international retailers, food service chains, and manufacturers such as Ahold, Wal-Mart, Carrefour, Coca Cola, McDonalds, and Nestle. This development has inevitably drawn criticism from developing countries and caused concern among those who advocate the use of public standards as a means to increase market access as well as confer WTO legal approbation.

There are considerable advantages for exporting firms, and especially multinational firms that both source and export ingredients and products from/to multiple countries, to invest in and use private standards to facilitate international exchange. One important reason for the increase in the use of private standards by a sector that introduces literally thousands of new products into the marketplace each year is more rapid development relative to Codex standards. Codex reports that the majority of standards are completed within two to four years, but there are prominent examples of standards that have taken more than a decade to develop (for example, an identity standard for chocolate, commercial grade standards for apples) (Heilant, 2009). Another advantage of the creation and use of private standards for firms is that they can be designed for specific market segments that they are trying to reach, unlike international public standards which by design reflect a consensus benchmark for heterogeneous consumers both across and within countries.

The increasing use of international private standards can benefit consumers in importing countries by reducing information asymmetries long inherent in global food trade and benefit producers in exporting countries by reducing the transaction costs of complying with multiple proprietary standards. Moreover, the GFSI emphasizes that its standards primarily serve to "amplify" Codex General Principles of Food Hygiene Code of Practice and that there are currently a relatively small number of specific requirements that cannot be traced back to Codex standards (WTO 2010b). However, the increased reliance on private standards by firms may weaken the effectiveness of relying solely on Codex standards as a market access strategy and therefore inadvertently undermine one of the key objectives of the SPS Agreement. Moreover, while the open governance structure of the GFSI reduces opportunities for regulatory capture by protectionist market participants, private standards do not fit comfortably into WTO legal architecture (Stanton, 2007).

Conclusions

Adoption of international public or private standards can benefit the consumer in situations where regulatory heterogeneity across importing countries or firms arises

6 These schemes are the British Retail Consortium Global Food Standard Version 5 (BRC); the Dutch HACCP Option B; Food Safety System Certification (FSSC); Global Red Meat Standard (GRMS); International Food Standard Version 5 (IFS), GLOBALGAP, and FMI's Safe Quality Food 2000 Level 2 (SQF).

from chance differences, informational inadequacies or regulatory capture. On the other hand, adoption of international standards is less likely to help consumers if the regulatory diversity is due to income or taste differences, or significant variation in the circumstances and risks. In those instances where the wider use of international standards can be justified on the basis of normative considerations, the following steps could help target and design public investments and policy responses:

1. A monitoring system implemented by the international standards organizations could improve information about the extent, pattern, and market effects of adoption. The task is not easy: translating the notices published in countries' official gazettes into internationally comparable measures of compliance requires an investment of real resources that WTO members have yet to support. The extent and pattern of use of international standards across levels of development, product category, and regulatory objective, as reported in this study, provides a starting point for targeting futher analysis to make the task more manageable. Such an effort would require either additional financial support for such monitoring, by the "three sisters" or the WTO, or the strengthening of their own reporting requirements. Progress via the latter mechanism will often be hindered by WTO members' reluctance to acknowledge that they have not adhered to the harmonization principle of the SPS Agreement, even if allowed under Articles 3 and 5. However, at a minimum, the information currently available could be systematically analyzed with additional resources so as to be able to see in what areas IS are being successfully implemented and where alternatives are needed.

2. The relationship between IS and private standards needs to be explored further. It is not surprising that food exporters are turning to the use of private standards in the absence of globally recognized public standards. Meeting the challenge of the growing importance of private standards will require analysis of instances when they may be lower than the social optimum, which would suggest that the best targeted policy response would be information in the form of national or international public standards. A remedy for private standards that are higher than the social optimum, when set strategically to raise competitors' costs, can be enforcement of laws to increase competition in markets. The challenge of private standards also suggests a new urgency for the development of criteria for setting priorities for international standards organizations, and a candid assessment of what they can deliver, based on analyses outlined in the first recommendation. The SPS Committee has begun to explore a number of questions related to the proliferation of private standards, including their impact on developing countries, their legal status, and their market effects (WTO 2008b).

3. The importance of IS to developing countries is apparent from their greater use of such regulatory frameworks. Thus, increasing investment in selected international standards is likely to promote the integration of developing countries into the international trading system as well as increase the supply of global public goods such as food safety. This strategy is likely to be particularly useful for smaller countries and those without sophisticated administrative capacity in areas such as trade regulations. The initiatives that are underway to help developing countries meet the standards required to gain entry into developed country markets, including the WTO's Standards and Trade Development Facility, should also focus on the need for international standards that would assist the growth in trade among others that accept such standards.

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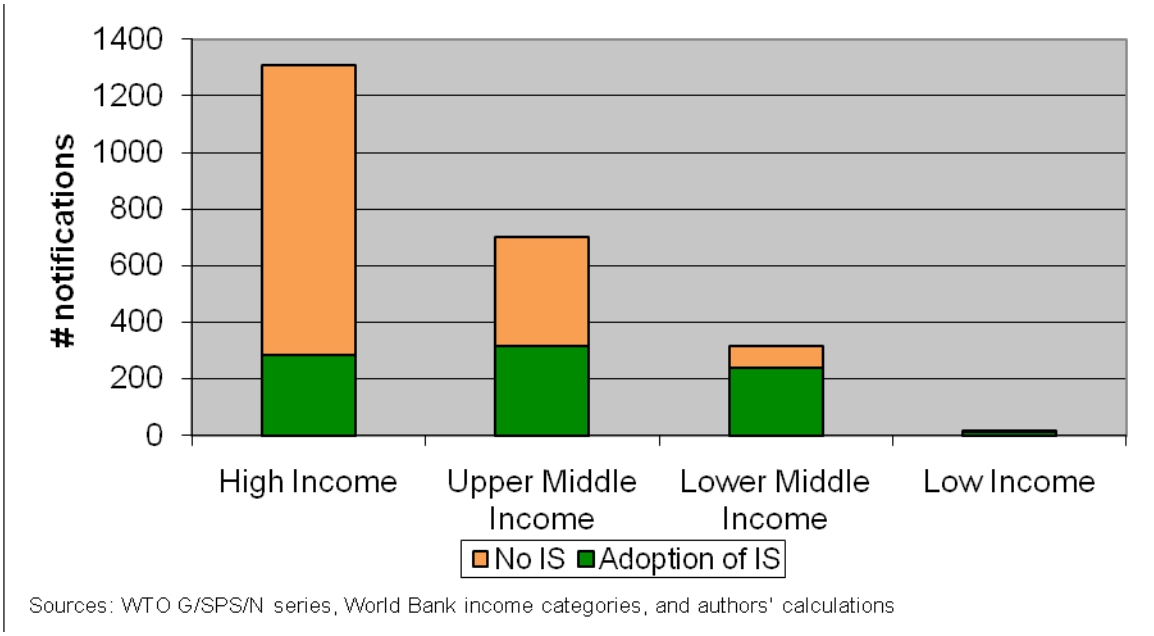
Figure 1: Adoption of International Standards by WTO Members, 2006 - 2008



Sources: WTO G/SPS/N series, World Bank income categories, and authors' calculations

Table 1: Adoption of international standards by product category, 2006-08

Category	Notifications by product category				Use of international standards 1/				
	no. notifications								
	2006	*2007*	*2008*	*Total*	*2006*	*2007*	*2008*	*Total*	*Percent*
Animals and Animal Products	96	87	91	274	64	45	69	156	56.9
Fish and Crustaceans	13	16	20	49	6	8	8	22	44.9
Live Trees, Plants, and Planting Material	54	41	87	182	33	26	26	85	46.7
Edible Vegetables, Fruits, and Nuts	138	118	101	357	38	36	33	107	30.0
Cereals and Oilseeds	46	57	55	158	18	15	23	56	35.4
Processed Foods	24	21	40	85	11	9	16	36	42.4
Residues from Food Industries, Animal Feed	8	5	21	34	6	1	13	20	58.8
Multiple and Miscellenous Products	422	411	368	1201	105	106	139	372	31.0
Total	**801**	**756**	**783**	**2340**	**281**	**246**	**327**	**854**	**36.5**

1/ Includes adoption of international standards, or adoption with deviations from international standards

Source: WTO G/SPS/N series and authors' calculations

Table 2: Use of international standards by objective, 2006 - 2008

	Total notifications					Notifications indicating use of international standards 1/										
Year	*Food safety*		*Plant*	*Protect humans from animal & plant pests & disease*	*Protect*	*Food*	*%*	*Animal health*	*%*	*Plant*	*%*	*Protect humans from animal & plant pests & disease*	*%*	*Protect*	*%*	
2006	541	188	450	365	88	111	21	81	43	122	27	59	16	67	76	473
2007	536	151	362	297	100	123	23	71	47	109	30	64	22	56	56	501
2008	471	174	319	355	108	143	30	122	70	116	36	147	41	91	84	401
	1548	513	1131	1017	296	377	24	274	53	347	31	270	27	214	72	1375

Note: The total number of notifications summed across the five categories of objectives (4505) is greater than the total number of notifications (2340) as more than one objective was often identified on a single notification.

Source: Notifications in the WTO/SPS/N series and authors' calculations

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