Food Regulation and Trade: Toward a Safe and Open Global System—
An Overview and Synopsis

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Nine years ago the WTO strengthened international rules designed to discipline the regulatory measures that countries adopt to achieve legitimate agricultural and food safety and quality goals. In the case of sanitary and phytosanitary (SPS) measures, the disciplines required a scientific risk assessment and that measures be formulated to achieve their technical objective in a least-trade-distorting manner. In the case of other quality goals, the agreement on technical barriers to trade (TBT) again requires that measures be appropriate to the goal and least trade distorting. The new disciplines were backed up by a more binding dispute settlement process.

How well these new multilateral agreements have worked is important for several reasons. First, when sovereign countries adopt regulations to address health, safety and quality goals, they often fail to take into account the international implications of imposing a measure. That is a major goal of the SPS and TBT agreements. Second, these agreements can impose undue administrative costs on poor countries, with little offsetting benefit. So the impact on the ability of developing countries to participate actively in world trade is of critical importance. Third, world agricultural trade is growing fastest in high-value products, such as meats and fruits and vegetables. These are products for which technical standards and regulations are most important. Fourth, acceptable standards for agriculture and food are evolving worldwide under various forces, ranging from newly emerging threats, to scientific advances affecting production and processing, to changing consumer incomes and preferences. The ability of the multilateral agreements to keep up with these developments is crucial in providing a framework in which national rules are embedded.

This paper provides an overview and brief assessment of the challenges faced in international oversight over national agricultural and food safety and quality regulation. The paper is a synopsis of the key findings and recommendations from a book by the same name published by the Institute for International Economics in March 2004.[1] The objectives of that larger study were to assess in broad terms the need for and the state of regulation in the global food system, to highlight ways to achieve more open trade with sustained or enhanced food safety and quality, and to examine the obstacles impeding progress toward this goal. Critical elements of this assessment included a characterization of national food regulation, an evaluation of the international institutions charged with overseeing national regulatory decisions, and an investigation into how well these institutions have performed in the past, particularly since the launch of the WTO in 1995. What emerges is a picture of modest international disciplines on the regulatory decisions of sovereign nations and the need for ongoing improvements.

National food markets are highly integrated through global trade and investment, yet nations retain the principal authority over almost all dimensions of their food regulation and standards. Although the private sector undertakes most food production, processing, distribution, and marketing activities, optimal management of national food supplies involves various forms of government intervention. Without exception, governments regulate their food sectors. The economic justifications for a government role in food markets stem from both the public goods aspects of disease and pest control and the opportunities to reduce market transactions costs for firms and consumers.

The justifications for international oversight of national regulation, and for regulatory coordination among countries, follow similar lines. Global public goods tend to be

[1] Josling, Tim, Donna Roberts and David Orden. 2004. Food Regulation and Trade: Toward a Safe and Open Global System. Washington D.C.: Institute for International Economics (ISBN 0-88132-346-2).

underprovided by national governments, requiring positive action by bilateral, regional, and multilateral bodies. The transactions costs of international trade can be reduced by avoiding duplicative, conflicting, and inconsistent national standards. By striving for more coherent decision making among themselves, countries can influence the conditions under which international trade is conducted and thereby address common risks, improve product information, and foster welfare-enhancing transactions.

These justifications for national food regulation and for effective discipline and coordination internationally do not prevent controversy and conflict over regulations in the global food system. Regulation is so often the subject of international disputes because national institutions are subject to domestic political pressures. Food regulation can be used to restrict trade flows both by shifting relative costs among importers and exporters and by influencing the market demand for specific products.

Appraisal of the net benefits of trade against any costs that arise from risks or market information failures linked to an open food system is a useful counterweight to the pressures for trade-related regulation. Such an appraisal entails an analysis of the expected benefits and costs of measures that includes a gains-from-trade calculation. Underprotection—that is, when too much trade is allowed by the regulations and standards in place or by their inadequate enforcement—is likely to be a problem at times. But overprotection, when relaxation of regulation would yield net welfare gains, is also evident in the food system.

Two broad challenges must be faced to improve existing food regulation. The first is to achieve the appropriate balance within countries between reliance on domestically determined and internationally agreed-on product specifications. Common risk-reducing measures can facilitate trade in low-cost, safe products, and the benefits of trade can be enhanced by lowering

transactions costs by international harmonization. But, conversely, adoption of the appropriate risk-reduction measures may depend on countries' specific circumstances, making harmonization inappropriate. Undue harmonization might also impose limits on consumer choice. Finding the right degree of international coordination is essential to resolving this dilemma.

The second broad challenge facing food regulation is to maintain both the confidence of consumers and the cooperation of producers in implementing regulations and standards, while avoiding political-economy regulatory capture by either group. The resolution of this dilemma is found in improving national regulatory capacities and developing the competence and authority of international institutions to define and enforce disciplines on national regulators.

The sections that follow provide a summary assessment of the agricultural and food safety and quality regulatory issues and the accomplishments of the WTO in disciplining and encouraging coordination of national food regulations and standards. Some recommendations are made at the national and international levels to help address the two broad challenges that must be faced in enhancing the performance of the food sector. These recommendations are not intended to offer solutions for particular disputes, nor to fully address issues in the current Doha Round WTO negotiations. Rather, we point the way, in general, how to implement national regulation and international oversight to improve the efficiency of the global food system.

Assessment of the State of Food Regulation

The goals of food regulation can be classified in basic terms as either risk-reducing or related to non-risk product quality. The measures used can also be categorized by whether they focus on content or process attributes of products and by breadth, scope, and instrumentation. Knowledge of the requirements for verifying compliance or equivalence with a measure is also

important in assessments of food regulations. These classificatory variables allow some generalizations to be made about the appropriateness of regulations in achieving their objectives.

The provision of public goods is at the core of the justification for many risk-related measures. For example, regulation may be required to capture the public good of improved production capacity resulting from reduced hazards to animal and plant health. Risk-related measures can also remedy market failures stemming from imperfect information about the safety of a food product. Public intervention is justified economically when a food safety measure, such as legally mandated limits on naturally occurring toxins, improves social welfare net of costs.

The regulation of product quality aims to safeguard the integrity of market transactions through remedies for imperfect information that might otherwise increase the costs of exchange for firms and consumers. These remedies include labeling, grades and standards, and measures that protect product trade names and identifiers. 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. Yet, increasingly, food quality is becoming subject to national regulation as advocates demand either specific attributes or disclosure of information about the attributes of foods.

One argument that emerges from our analysis is that regulations are most often the 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—are the preferred approach when food quality goals are at stake. This argument is not to deny that risk-related regulations are sometimes distorted for protectionist purposes, nor to reject the claim that market failures occur in the provision of product quality information. The former warrants international disciplines and

the latter some degree of government intervention. Yet the global food system is best served when regulations are used predominantly for risk reduction and sparingly to govern food quality. The market, rather than the government, is likely to be the more agile institution for accommodating a wide range of continually evolving consumer preferences.

From this perspective, some of the most serious tests facing the global food system arise from the dynamics affecting the pattern of national regulation. Increased consumer demand for quality-related product differentiation is a positive, income-driven phenomenon, attainable at declining cost as information technology advances. Acting on this demand, interest groups that feel strongly about specific food attributes have an incentive to seek greater government regulation of product quality. In international discussions, some governments have argued that increased regulation reflects a new era in the food sector in which policymakers must be attuned to the demands of consumer as well as producer advocates. But the new focus on quality in regulation can lead to regulatory overprotection. Producer groups also favor stronger regulations on quality in those instances in which they can gain market advantage, such as from receiving exclusive rights to various product names. This situation can also lead to overprotection and distort trade.

Risk-Reducing and Quality Measures

Regulatory measures that address risk in agricultural production and food consumption underpin the structure of market transactions within countries and influence competitive advantage among trade partners. On the supply side, private costs can become excessive without collective action to manage risk hazards. Likewise, consumers can mitigate risks by means of their food consumption and handling choices, but they cannot observe food-borne hazards such as pesticide levels or microbial contamination. Regulatory oversight of food safety is therefore essential, particularly for the large number of unbranded food products in the global marketplace.

For animal and plant pests and diseases, the basic standards for disease control are broadly accepted internationally. The costs of new infestations or epidemics can be high, such as when foot and mouth disease (FMD) breaks out in a country previously considered FMD-free or when a new disease emerges, such as BSE. Yet international borders sometimes become a convenient surrogate for risk differentiation, leading to inappropriate regulatory discrimination among products by country of origin. A range of disputes has arisen over specific regulatory measures imposed for plant and animal pest and disease control, and new disputes will continue to arise. WTO rules requiring reform of unnecessary sanitary and phytosanitary barriers to trade, in tandem with the multilateral standards organizations' dissemination of relevant scientific research, are therefore critical to sustain an open global food system.

The regulation of food safety poses particular challenges, and for somewhat different reasons than the pests and diseases affecting animals and plants. Risk perceptions can affect estimates of the benefits of food regulation, which authorities weigh against the costs to industry of reducing food-borne hazards. It has long been recognized that unnatural and unfamiliar risks such as those that might be associated with new food production technologies are more alarming to consumers than natural and familiar risks. Even when a natural contaminant, such as *Salmonella*, is identified as the source of food-borne illness, broad consumer avoidance of the implicated product can trigger a dramatic fall in consumption out of proportion to the actual risk involved. Thus the global food system has much to gain from well-designed and rigorously enforced food safety regulations that target hazards that threaten consumer health and undermine confidence in the food supply. Under the right conditions, consumers trust their regulatory institutions to ensure the safety of their food and to respond rapidly to any breakdown in risk

management. Problems occur when such trust is lacking, and both domestic and foreign suppliers, as well as consumers, suffer from the ensuing loss of confidence.

The governance of food safety regulation from a global perspective is also challenging because demands for protection among countries from food-borne hazards depend on income differences and other determinants of consumers' risk aversion. The capacity to regulate effectively also varies with levels of national income and development. Poorer countries will typically have less comprehensive programs in place for the assurance of food safety. The increase in exports of high-value and processed foods from some developing countries suggests that consumers in developed countries are prepared to trust imported food if it meets the standards set in the domestic market. But it follows that the impact on developing-country exports can be severe if those countries are unable to meet these high standards.

The reform of food safety regulation, particularly in the wealthy countries, has placed greater emphasis on using process standards, including those that might be part of a Hazard Analysis and Critical Control Point (HACCP) program, to achieve desired content attributes. Process standards are more difficult to implement internationally than product standards because they involve complex verification and enforcement procedures by 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 foreign products. 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, as illustrated by the long negotiations over a veterinary equivalence agreement between the United States and

European Union. It is difficult to avoid the conclusion that in some instances, differences over process standards among developed countries are attributable to regulatory protectionism.

International standards can play an important role in disputes over risk-reducing measures. The international standards organizations—L'Office International des Epizooties (OIE), the International Plant Protection Convention (IPPC), and the Codex Alimentarius Commission (CODEX)—can offer constructive evaluations. This constructive role was illustrated, for example, by the OIE's standards for disease vectors after the announcement of a possible BSE link to human variant Creutzfeldt-Jakob disease disrupted world trade in beef and bovine products in 1996. Countries are quick to adopt strong regulations when confronted with new risks in an environment of uncertainty, but slower to remove such measures when they are no longer necessary. In the BSE case, the OIE established that some traded products were not vectors for disease transmission, allowing certain initial prohibitions to be eased. Thus, the specification of international standards, reinforced by WTO disciplines, can sometimes bring countries to make needed changes and avoid trade disputes.

Yet, the reach of international disciplines is limited. The ability of the international standards organizations to control the spread of agricultural and food-borne pests and disease or to discipline the regulations of sovereign countries should not be overstated. Both Canada and the United States have faced, and themselves imposed against others, broad embargos on meat exports when single incidences of BSE have been discovered in these countries during 2003. Subsequent to the one incident identified in the U.S., regulatory authorities imposed emergency measures including the requirement that highly risky (specific risk) materials be removed from the food supply in slaughtering. Not only was this requirement imposed on domestic processors, but foreign processors in countries where BSE had not been detected were also required to

comply, despite the earlier U.S. claim that it had not before required the removal of these materials because there was no evidence of BSE in the United States. Thus, regulation of agricultural and food safety and quality is inevitably a complicated subject and often not as consistent as it might be hoped, despite the disciplines attempted through the WTO.

Perhaps even more controversial than regulations about natural food pathogens and diseases are food safety regulations that address the use of production-enhancing technologies, including pesticides and other agrochemicals, hormones, veterinary drugs, and product-enhancing food additives. For these technologies, the scientific basis for the regulation may itself be unknown or in dispute. Just as often, disputes arise when differences in public perceptions of risk persist among countries despite scientific consensus, or when countries have made different political choices about the desirability of adopting new technologies for reasons unrelated to safety. When strong differences in public perceptions are in play, or when risk-related and other goals become intertwined, international conflicts over regulations are often exacerbated. The duration and intensity of the long-unresolved beef hormones dispute between the United states and the European Union, for example, seem out of proportion to the relatively small economic stakes. But the highly politicized interests on both sides (producers of products long accepted at home for which scientific evidence indicates absence of risk and consumers in importing countries equally insistent that they have a right to preclude these products) have allowed little room for the respective governments to find a satisfactory resolution.

Quality-Related Measures

Regulations related to quality cover a wide range of characteristics both of products and, increasingly, of how they are produced and handled. Governments intervene by creating public standards for unbranded products, such as identity standards for fish and seafood or quality

standards for organic produce. Or a government may take another type of approach by setting disclosure requirements, such as country-of-origin labeling that distinguishes among products based on the location of firms involved in their production. Still other measures support the creation of brand identity through geographical indications (GIs) that may have reputational connotations for consumers and thus are of value to firms in specific localities. Governments can also remedy informational failures related to branded products. Examples include setting identity standards for processed foods to prevent consumer deception, or requiring nutritional labeling so that consumers have information that private firms do not have an incentive to disclose.

Of these various regulatory measures that governments might adopt, identity standards and nutritional labeling involve product attributes that can be readily verified through product testing. Geographical indications and country-of-origin identification are, by implication, related to process attributes that are not materially present in the final product. Depending on the breadth, depth, and precision required by particular regimes, verification of process attributes can impose higher regulation costs and can lead to claims of discrimination and market exclusion.

The proliferation of demands for government regulators to distinguish among products based on process attributes that are unrelated to detectable product characteristics is a critical new challenge in food regulation. Regulation of trade in GM products based on their production process is perhaps the paramount controversy, but process attribute regulation is also essential to such emerging consumer-driven demands as organic certification and protection of animal welfare. In the intense dispute under way among countries over the acceptance and labeling of biotech products, the trade aspect of the controversy hinges on whether GM and non-GM variants of the same crop are substantially equivalent. If they are, trade restrictions or labeling requirements for the GM varieties impose a discriminatory burden. If some but not all consumers

value GM-free foods, then markets would likely respond to these differing preferences, with private firms seeking market recognition by making voluntary claims about the absence (or presence) of GM content in their products. Such claims might be backed up by public standards and oversight. But regulations that have gone further have created a costly bifurcation of global food markets and contentious trade disputes.

Role of the WTO in the Food Regulatory Framework

National governments have paramount responsibility for food regulation, but the WTO has an important role in both enforcing disciplines on national regulatory decisions and achieving international coordination of regulations and standards. The SPS and TBT agreements, supported by the technical expertise of the international standards organizations, offer the fundamental disciplines, which are backed up by recourse to the WTO's dispute settlement procedures. Other agreements— including the TRIPS agreement, the GATT, and some multilateral environmental agreements—also play a role in defining the latitude and limits to regulation within the food sector.

The SPS agreement contains principles to guide regulation, including transparency, harmonization, science-based risk management, equivalence, and regionalization. The TBT agreement likewise encourages transparency and coordination of national regulations and standards through adoption of international norms. The WTO has had some success in each of the areas covered by these agreements, yet application of the basic principles has not progressed as far as it might have, and improvements can still be made.

The WTO has been successful in promoting symmetry of information about regulations and standards among its members through its notification process under the terms of the SPS and TBT agreements. Notification of new or modified measures has given firms a chance to change

production methods to meet new import requirements. Notification also has provided WTO members with the opportunity to question, propose modification, or challenge new or existing measures in the committees that implement the two agreements. This increased regulatory transparency has led to far greater scrutiny of measures than occurred under the GATT.

The WTO's promotion of harmonization has been less successful than its attempts to increase transparency. Because international standards are a global public good, it is not surprising that national authorities have underinvested in such measures. Not only are there too few international standards in the food area, but too many of the current international standards are outmoded, contributing to the low adoption rate for those standards that do exist.

The obligation under the SPS agreement to base measures on scientific risk assessment has been more successful in reducing the disingenuous use of sanitary and phytosanitary regulations and in promoting some convergence of SPS measures among countries. The impact of the risk management requirements of the SPS agreement has extended beyond WTO complaints and dispute settlement decisions to spur broad-based regulatory reviews by countries to determine whether they and their trading partners are complying with the obligation to base decisions on scientific risk assessments. In many cases, there is evidence that regulatory authorities are either unilaterally modifying regulations or voluntarily modifying regulations after technical exchanges. However, it is evident that some gaps remain in convergence around the principle of using science as a basis for regulation. In some circumstances, countries' reliance on the precautionary principle to guide risk management decisions has led to high-profile trade disputes, as in the hormones and GM food cases.

Equivalence is an alternative to harmonization. The SPS and TBT agreements require WTO members to allow imports from countries that have measures equivalent to their own. This

provision endorses regulatory flexibility which allows countries to allocate scarce resources efficiently rather than identically. Despite the conceptual appeal of equivalence, its use is constrained by various factors, both operational and political. The administrative burden of equivalence determinations is often significant even among countries with similar levels of capacity. Moreover, recognizing the equivalence of an alternative regulatory regime may require national regulators to offer the same alternative to domestic producers, requiring in turn new or revised domestic regulations before foreign producers can gain access to the market. Some progress has been made, but experience so far suggests that negotiating equivalence agreements is difficult and their use is not common.

Regionalization under the SPS agreement has also met so far with only limited success, and the successful cases have depended heavily on the efforts of the exporting countries. Argentina's numerous setbacks in its efforts to eradicate FMD underscores the fact that investments in public-sector regulatory infrastructure are needed to act as an incentive to private sector eradication efforts and thus establishment of the preconditions for regionalization. But it is also evident that national regulation will not always work: Transborder pest or disease controls may be required where there are insufficient natural barriers or when animals (including wildlife) move freely across borders. Creating or reinforcing regional sanitary and phytosanitary measures across countries will often be necessary to fully realize the gains from trade.

To summarize, the WTO agreements and committee procedures, together with the reviews that WTO rules have encouraged at national, bilateral, and regional levels, have provided valuable channels through which countries can strengthen the framework for global food regulation. They may also challenge policies of their trade partners through these channels when they have doubts about whether regulations conform to international rules as they apply to

food trade. The institutional innovations that emerged from the Uruguay Round have given the WTO an increased role in shaping, if not determining, regulation in the global food system.

Lessons from WTO Dispute Resolution

The compliance of countries with the WTO agreements is reinforced by the organization's formal dispute settlement procedures. Only a few conflicts over food regulations have led to the establishment of dispute panels, but these few cases have played a critical role in defining the scope of WTO rules and obligations.

Of 32 formal requests for consultations about food regulations during 1995 to 2002, only seven complaints (related to six distinct cases) proceeded to panel and Appellate Body rulings. In the four SPS cases— hormones, salmon, varietal testing, and apples—developed countries challenged the regulations of other developed countries, and in each case the panel and Appellate Body concurred that the regulation in question violated the requirement that it be based on a valid risk assessment. These outcomes demonstrate the importance accorded to the principle of science-based risk management in the SPS agreement and show that even the measures of countries with advanced scientific establishments are not immune to challenge. The outcome in the hormones case demonstrates further that the WTO Appellate Body can rule against measures based on popular consumer misconceptions of risks, as well as more overtly discriminatory measures. This result removes a degree of national political sovereignty for regulations in cases in which evidence has not been marshaled to demonstrate any risk from trade.

In the other two cases of food regulation that advanced to rulings by the Appellate Body, developing countries lodged complaints against measures of developed countries. In the sardines case, brought by Peru, the Codex Alimentarius international standard was found to be effective and appropriate to achieve EU objectives of transparency, consumer protection, and fair

competition. The importance of this case lies in demonstrating that international standards can take precedence over national regulatory decisions and can set bounds on the use of policies that, in effect, limit imports. In the second case, India, Malaysia, Pakistan, and Thailand challenged U.S. restrictions on importation of shrimp when countries failed to use turtle-excluder devices. The case established the precedent that process standards can be mandated in regulations to achieve an environmental goal. This precedent provides a small but significant exception to the product-process doctrine, which deems any regulation affecting trade based on how a product is produced to be out of compliance with the WTO rules. In the shrimp/turtle case, the WTO Appellate Body concluded instead that the objective of the U.S. law was legitimate under GATT Article XX and, ultimately, that U.S. implementation of its policy was justified because of its serious and ongoing efforts to minimize negative trade effects.

Where the greatest difficulties arise for WTO dispute resolution is in cases such as beef hormones in which strongly held differences of views among countries have not been reconciled by other means. That the most contentious of these cases have involved issues of risk, where one might expect scientific evidence to provide a basis for resolution, suggests the practical limits of science in securing regulatory convergence. Unfortunately, too much reliance on the WTO's dispute resolution process to address these disagreements will create problems for the acceptance of its rulings, as may soon become evident for decisions related to genetically modified foods.

When rulings for the complainant in such difficult cases lead to retaliatory tariffs because the respondent fails to change its policy or offer acceptable compensation, the trade system suffers, even if the validity of WTO procedures is upheld. Small developing countries in particular have only a limited ability to use the threat of sanctioned new tariffs to induce compliance by a developed country with a WTO ruling. And whenever retaliatory tariffs are

imposed, they have negative economic effects. Thus excessive use of the dispute settlement process in highly contested cases could prove damaging to the WTO and to the liberalization of world agricultural markets.

Recommendations for Improving Regulation

Food regulation is likely to expand over the coming years and the number of related international disputes is likely to increase. So far, the mechanisms in place—negotiated WTO agreements, implementation discussions and informal conflict resolution through the WTO committees, and formal dispute resolution—have proven useful. There is no doubt at this point that the WTO rules remain necessary. Disingenuous use of regulatory measures is still evident in agricultural markets, and, even though the extent of their incidence and impact has not been fully quantified, these abuses need to be disciplined. Contrary to the predictions of some consumer and environmental advocates, the WTO disciplines have not resulted in the "downward harmonization" of regulations. No credible evidence has emerged to indicate that WTO rules have prevented countries from achieving legitimate regulatory objectives, even when very trade-restrictive measures have been adopted.

The current global regulatory framework, in deference to national sovereignty, still allows countries to adopt measures whose global or even national costs outweigh their national benefits. Thus, there is scope for enhancing the efficiency of the global food system. One conceptual approach is to envision that national governments entrusted regulatory functions to a single global institution. Such a solution would have some benefits in terms of reducing regulatory incompatibilities and transactions costs, but would run up against insuperable practical, political, and administrative problems.

In the absence of a global food agency, the basic challenges, of achieving a balance between harmonization and diversity and between political support and political capture, must be faced within the existing institutions. What follows are some recommendations that, if pursued, could improve national and multilateral food regulation.

Recommendations at the National Level

Economic assessments of regulations is still an underdeveloped element of the food regulatory framework. The risk management provisions of the SPS agreement, for example, require regulators to use means that are no more trade-restrictive than necessary for achieving sanitary and phytosanitary goals, and to avoid arbitrary variation in the levels of risk reduction achieved by their policies if such variation creates a disguised restriction on trade. However, the SPS agreement does not elaborate further on risk management principles. Likewise, the TBT agreement provides only limited guidance on which measures are desirable to adopt beyond the requirement that they have some rationale in terms of one or another legitimate goal and that they are not more trade-restrictive than necessary given that rationale. The problem is that national regulatory options taken under these proscriptions are still likely to be contentious if they severely limit market access to achieve incremental health, safety, or other benefits. It remains a challenge for national regulators to build on the legal criteria of the SPS and TBT agreements to undertake the benefit-cost analysis that would give a more defensible basis for import protocols.

Toward this end, developed countries should adopt an “agreements plus” approach to both risk-reducing and quality regulations by balancing the benefits of regulation against all costs, including the costs of forgone trade. A change from the narrow risk analysis perspective to the benefit-cost perspective for SPS measures would be a constructive move toward a beneficial

opening up of markets and would reduce the scope for trade disputes. Plant, animal, and human health and safety would not be sacrificed for trade, but trade would be taken into account as an integral part of the commercial environment that regulations affect. Countries should view trade as an activity that provides them with an expanded range of safe agricultural and food products at lowest cost, and regulations as a necessary way of ensuring the safety of food regardless of where it is produced.

Recognition of the benefits of imports would also provide a rationalization for public investment in monitoring and inspection services at a time when the pressures to downsize public agencies are strong. Consumer opposition to trade could be exacerbated by reduced oversight of imports, and it is not in the interests of importing or exporting countries to reduce the effectiveness of inspection services. This is all the more true since the September 2001 terrorist attacks—countries must now guard against biosecurity threats, but without creating prejudice against legitimate trade. When governments regulate agricultural and food markets, they should do so with confidence and credibility. Stricter enforcement of existing and well-justified regulations, as opposed to indifferent enforcement of additional dubious regulations, is preferred. But such an approach to regulation is not always the one that receives the most vocal public support.

The increasing use of process standards in today's food regulation creates both opportunities and challenges for both developed and developing countries in the global food system. In animal and plant health, the use of process standards in systems approaches to risk management is replacing more trade-restrictive measures such as bans. Conversely, the increased use of process standards in the regulation of food safety often impedes trade between developed countries with equally rigorous measures. Any efforts that will lead to the substitution of product

for process standards should be encouraged, because process standards are more liable to subjectivity in conformity assessment and thus are more vulnerable to regulatory capture. The wider use of product standards in the regulation of food quality is also to be encouraged. For genetically modified products, a move to label GM products based on detectable product content rather than the production process might minimize labeling costs and help to defuse an international controversy.

Nonetheless, it also must be recognized that process standards are here to stay. The regulation of some quality attributes of foods, such as organic, dolphin-safe, or free-range, will always require process standards. 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 implies the need for further exploration of the potential for using private, third-party certification services in the food sector, especially within countries lacking satisfactory public certification infrastructure. In other situations, joint private–public initiatives in quality assurance may be a way to achieve welfare-enhancing trade. A serious commitment to explore such options could substantially reduce developing-country opposition to regulation in developed countries that accommodates the interests of consumer and environmental advocates.

The pledge to examine 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. Regulatory proposals that advance measures not coincidentally favorable toward domestic production circumstances could help dispel suspicion that consumer concerns are addressed only when it is politically expedient to do so. In many instances, voluntary labeling is sufficient for achieving the public policy goal of informed

choice, but mandatory labeling may sometimes be deemed necessary. Whether labeling policies be voluntary or mandatory, consumers are ill-served unless they are designed in a way that maintains competition in markets.

One policy prescription that is officially endorsed by the WTO and other multilateral institutions is the recommendation that countries adopt international standards. However, international standards should be adopted only if they increase net national welfare, not solely to provide the basis for an export-led growth strategy whose success depends on the adoption of these standards by others. Optimal levels of domestic food safety regulation, for example, will vary with national incomes and other characteristics among countries. Developing countries may not wish to, or be in a position to, adopt international standards for domestic markets. To insist that they do so could impose heavy costs on low-income consumers. The creation of export-oriented production enclaves that meet the standards of developed countries may benefit developing countries more than domestic adoption of an international standard, especially if that standard has not been widely adopted by developed countries. National governments and private firms operating in developing countries can facilitate this approach to ensuring broader participation in the global food system.

Recommendations at the International Level

More transparency in food regulations has been one of the successes of the WTO agreements. Yet a case can be made for even greater transparency, with notifications being clearer about how proposed measures might affect trade. There is also a case for creating an additional transparency mechanism to resolve disputes that surface when bureaucratic intransigence prevents resolution of issues over small differences. One possibility might be to allow exporting countries to ask the international standards organizations to convene a panel of experts

to review the technical merits of disputed measures. The rationale for specific elements of some regulatory regimes is so weak that the prospect of such a peer review could prompt negotiated solutions without recourse to a WTO complaint or formal dispute settlement panel.

Besides convening experts to reconcile differences in regulations, the international standards organizations could take on more ambitious tasks to improve the global food system. National governments have on occasion vested international organizations with the mandate and the resources to eradicate particular human diseases. Animal and plant pests and diseases could similarly be addressed as common problems for the global economy rather than as a local disadvantage that occasionally spills over from one country to another. At a minimum, international efforts should be increased to achieve regional pest and disease eradication goals.

Proposals to expand the existing mandates of the international standards organizations may raise concerns that these organizations would be diverted from their core activity of promulgating standards. The dissemination of information at the multilateral level in the form of international standards can be important to national regulators in several ways. Such standards can promote scientific approaches to regulation and educate developing countries about innovations in risk mitigation. International standards also benefit the trade system. They can provide the basis for disciplining an egregiously protectionist measure, and can also be useful in relieving countries of the obligation to defend their standards to others.

However, the normative basis for harmonization is not overwhelming, and there is little evidence to indicate that international standards in foods have succeeded notably in opening up trade. Therefore, it must be concluded that international standards have improved the functioning of food markets, but more by improving the quality of regulation, which mostly benefits consumers, than by reducing the transactions costs of exporting to specific markets, which

delivers more benefits to exporters. Expectations about what international standards can contribute to the trade system may therefore have to be adjusted downward. International standards may have only modest impacts on the specific regulations of the major countries.

Even if developing countries choose to allocate more resources to meeting the requirements of major import markets rather than to adopting international standards, their regulatory infrastructure and production conditions will often be lacking. Meeting new requirements can be an uphill task for developing-country exporters, even within an export production enclave. As the complexity of the standards they face increases, the disparity can be expected to widen. In view of these difficulties, WTO members, when launching the Doha Round, agreed to undertake several initiatives to help developing countries. For example, members agreed to give developing countries more time to comply with new import requirements, as long as staggered implementation allows the importing country to achieve its overall health or product quality objectives.

In the area of food regulation, the approach of offering special and differential treatment to developing countries under the GATT/WTO is highly questionable. In seeking greater exemptions from importers' standards, developing countries would be branding their products inferior or unsafe. For SPS regulations, any such allowances are especially pernicious to the interests of developing countries. Fundamentally, special and differential treatment runs counter to the science-based foundation of the SPS agreement. Even in the unlikely event that regulators were to tolerate such positive discrimination, it is unlikely that producers or consumers in the importing countries would allow anything except the most trivial concessions. Special and differential treatment does not further the goal of the integration of developing countries into the global food system. Reputation matters in agricultural and food markets.

Technical assistance is the better remedy for the challenges faced by developing countries. Given the limited effects of harmonization, the difficulty in reaching equivalence agreements to expand market access, and the increasing importance of process attributes in consumer demand for foods, technical assistance directed at conformity assessment services to certify compliance is likely to yield the highest payoff for developing countries and therefore should be a priority within the global food system. Technical assistance to increase participation in international standards organizations or to increase the presence of developing countries in the WTO is likely to have a lower payoff both for the country concerned and for global trade.

Some developing countries believe strengthened and expanded protection for geographical indications serve their interests, although European countries are primarily responsible for the prominence of this issue in the Doha Round negotiations. At present, WTO members are obliged to establish the legal infrastructure necessary to protect GIs. In principle, the protection of commercial identity can be welfare enhancing, but the protection of intellectual property in the form of GIs has a lesser claim on the support of the international community than the protection of intellectual property through patents, which are widely thought to further innovation and growth. A multilateral commitment is needed to further study of the impact of the GI proposals on the global food system, as has been undertaken for standard trade policies. It might be possible to persuade those countries demanding strengthened GI protection to sharply reduce trade barriers. Rents associated with consumer familiarity with GI-protected goods would then not merely be added to those afforded by tariffs and other measures. Producers and consumers of undifferentiated products in the global food system would also reap benefits from the negotiation of such an agreement.

Seizing the Opportunities from Trade

Our analysis suggests that international oversight of national regulation has been constructive, but that much remains to be done by national governments and international institutions to improve the global regulatory framework for agricultural and food markets. Developing as well as developed countries have stake in strengthening this system.

The debate on the international effects of food regulation has been framed largely by the WTO rules. From a broader perspective, governments should adopt the policy options that provide the greatest expected benefits relative to costs, and should not be satisfied merely with legally defensible measures. However, understanding what is legally possible is important in judging the costs and benefits of regulation. To that end, ongoing discussions in the WTO will improve governance in this area of public policy. These discussions alone, however, are unlikely to provide sufficient guidance. Seizing the opportunities that trade provides for a diverse, safe, and economical global food supply requires overcoming the shortcomings stemming from too narrow a focus on the legal interpretation of the relevant WTO agreements. Governments should adopt approaches to complement market incentives that encourage producers to compete for market shares of sales to attribute-conscious consumers. Indeed, they should do so even for risk-related measures, where the justification for government regulation is strongest. Poorly designed policies, by contrast, stifle innovation and competition by fostering false product differentiation that stigmatizes foreign products.

In short, what is needed is a constructive shift in the current policy debates. The emphasis should move from viewing expanded trade as a threat to providing consumers with products that have desired attributes, to viewing expanded trade as a resource-efficient means of achieving this objective. Appropriate national regulation within an effective framework of international oversight is the key to securing open food markets that contribute to higher standards of living.