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**Food Safety Issues, Trade and WTO Rules:
A Developing Country Perspective***

Prema-chandra Athukorala

Australian National University
Division of Economics
Research School of Pacific and Asian Studies
Australian National University
E-mail: Prema-chandra.Athukorala@anu.edu.au

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Food Safety Issues, Trade and WTO Rules: A Developing-Country Perspective

1. Introduction

The impact of food-safety standards on world trade, and the role of the Sanitary and Phytosanitary (SPS) Agreement and the related dispute settlement mechanism of the World Trade Organization (WTO) in averting trade-impeding effects of these standards are at the forefront of the current debate on reforming world trade rules. These issues are of particular importance for agricultural-resource rich developing countries as they seek to expand exports of processed food, a product category with immense potential for market penetration in the lucrative developed country markets. Export success of a country in this product area depends crucially on its ability to meet international food-safety standards and to participate effectively in the WTO dispute settlement mechanism in the events of related trade disputes. Many development countries face severe constraints in absorbing best-practice information and mobilising resources for meeting these requirements.

Trade impeding effect of SPS standards on developing countries is likely to increase over time for two reasons. First, food safety is a ‘luxury’ good the demand for which rises as income levels rise, and greater prosperity tends to be accompanied by increased demand for more stringent SPS standards in developed countries. Many in developed countries see the much lax SPS standards that often prevail in developing countries as a threat precipitating ‘a race to bottom’. Second, and perhaps more importantly, as traditional trade barriers such as tariff and quantitative restrictions continue to decline, food safety regulations and other technical barriers are likely to be increasingly used to block trade.

The purpose of this paper is to review the key issues related to the trade effects of food safety standards in the context of the current debate on strengthening the global trade architecture for development. The paper is structured as follows: Section 2 surveys the emerging trends and patterns of

processed food exports and their implications for development policy in agricultural-resource rich developing countries. Section 3 discusses the main channels through which food safety standards impact on world food trade with emphasis on problems faced by developing countries. Section 4 introduces the legal framework set up under the World Trade Organisation (WTO) and its achievements in redressing possible trade-impeding effects of food safety regulation. The paper ends in Section 5 with some concluding remarks on policy options.

2. Trends and Patterns of Processed Food Exports

The past three decades have witnessed a dramatic transformation in international division of labour within the global agro-food system. The relative importance of 'classical' export commodities traded mostly in raw form (coffee, tea, sugar, cocoa and so on) have sharply eroded as a result of rapid expansion of trade in products such as fruits and vegetables, poultry, fish and dairy products, which are exported in processed form. The share of these new dynamic exports (henceforth referred to as 'processed foods'¹) in total world agro-food trade increased from 27% in 1970 to 44.6 per cent in 1998 and to 58 per cent by the end of 1990s. The increase is sharper for developing countries (from 39 per cent in 1980 to 52 per cent in 1999) compared to developed countries (from 47 per cent to 61 per cent).

The share of processed food in total merchandise exports has however remained virtually unchanged for the two country groups and in aggregate, reflecting the faster growth of manufacturing exports compared to other commodity categories. The rapid growth of manufacturing, however, needs to be treated carefully because of the high import content of the products involved, the degree of which may have increased over the years because of the on-going process of product fragmentation in international production (Yeats 2001). If the export growth rates were estimated in net terms (eg. gross exports – imported inputs) the relative growth of processed food in world trade would turn out to be much larger.

¹ A widely used alternative term is 'high-value foods'.

The most prominent of the new dynamic items exported by developing countries has been processed fish, whose share in total processed food exports from developing countries increased from 9 per cent in 1970 to 30 per cent in 1999 (Table 2). There has also been an increase in the share of preserved fruit in processed food over time, though not as spectacular as in the case of processed fish. On the other hand, shares of 'traditional' items such as meat products, sugar and molasses, animal feeds, and vegetable oils have either fallen or fluctuated erratically over time.

Powerful forces on both demand and supply sides have underpinned this far-reaching change in world agricultural trade (Athukorala and Sen 1998, Henderson *et al.* 1996, Watts and Goodman 1997). On the demand side, 'internationalisation of food habits' - the increased importance of imported processed items in consumption patterns in developed countries as well as in large sections of the populace in many developing countries - appears to play a key role. Factors such as international migration, the communications revolution and international tourism have contributed to this phenomenon. This significant demand-side impetus seems to have been supported by important supply-side developments such as improvements in food technology, refrigeration facilities and transportation that have made processed food items easily tradable across national boundaries. In sum, the emergence of process foods in world trade is a structural (rather than a 'passing') phenomenon, which is deeply embodied in the ongoing process of global economic integration. This structural shift has also been aided by trade liberalisation initiatives under various rounds of world trade negotiations.

Table 3 provides data on export performance by individual countries. Among the 37 countries listed in the tables², some countries have performed far better than

² We started extracting data for all developing countries (96) covered in the UN data system. The countries finally chosen for the study (37 in number) are the ones for which data are available in the required form on a consistent basis for the period 1980-1999. Despite data availability, the city states of Hong Kong and Singapore are excluded from the country coverage as, given the nature of the resource endowment, food processing was never an export option available to them. A significant amount of processed food from other neighbouring resource-rich countries is routed through these counties as part of entrepot trade. They also undertake some final stage processing of these items.

others in this area. For example, Bangladesh, Bolivia, Chile, Indonesia, Korea, Malaysia and Thailand had annual growth rates close to or exceeding fifteen per cent in 1970-1999.³ In contrast, Cameroon, the Dominican Republic, Ghana, Nicaragua, Nigeria, Sudan, Senegal, Tanzania and Zambia exhibited annual growth rates of five per cent or less. There is some indication that generally countries belong to the high- and middle-income groups (following the World Bank classification) have performed better compared to countries in the low-income category. Among the low-income countries, Bangladesh is a notable exception, with a growth rate of processed food exports that is more than double that of any other low-income developing country.

The new export opportunities in processed food deserve special attention in considering export development policy options for agricultural resource-rich countries for a number of reasons. First, there is evidence that export diversification into this commodity category will bring in significant terms of trade gains. Whether export diversification will lead to terms of trade gains depends on the degree of income and price elasticity of demand for the commodities concerned. The data we have already analyzed relating to overall demand trends seems to suggest that processed food exports are superior to primary products in terms of these criteria. The available estimates of income and price elasticities of demand in food trade further corroborate this view (Islam 1988, Islam and Subramanian 1989, Fang 1996). Preliminary results of our on-going research on agricultural exports from Thailand as part of the present research project also suggest that terms of trade movements of processed fish and fruit exports for the past three decades closely resemble that of traditional manufactured goods.

Second, final stages of food processing appear to be labour-intensive. This is in contrast to in the production process of resource-based products (eg. further processing of resources such as minerals and timber) in which the dominant costs are capital charges and raw material inputs, and the most important factor substitution appears to be towards greater capital intensity to reduce raw material

³ Another country which has experienced high growth in processed food exports (16% during 1980-94) in recent years, yet we were not able to include in our country sample for want of required data covering the full study period, is China. For details on China's experience in this regard see Fang (1996).

costs (Roemer 1979, Findlay 1985). This implies that the expansion of the processed food sector can have a strong positive effect on employment generation in the typical 'labour-surplus' developing economy. While further research is needed on this subject, this view finds support from the available factor proportion estimates for manufacturing production in China (Fang 1996) and Malaysia (Athukorala 1998, Chapter 7).

Third, in terms of potential net export earnings and addition to national income (GNP), processed food appears superior to the 'conventional' manufactured exports. Most conventional manufacturing exports from these countries (such as garments, toys, sport goods, electronics components etc.) are based on simple domestic processing of imported inputs. Processed food products naturally have a greater domestic input content and hence a greater domestic value added compared to these products. Finally, the expansion of these exports is a powerful vehicle for linking the rural economy in a positive way with the on-going process of economic globalisation.

3. Food-safety Standards and Trade: The State of the Debate

Food-safety standards are measures of compliance regulations enacted by governments to protect the health and safety of their citizens and the environment in which they live. Following the promulgation of the Sanitary and Phytosanitary (SPS) Agreement in 1994 as part of the outcome of the Uruguay Round of world trade negotiations, these standards are now popularly known as 'SPS measures/standards'⁴. According to the Agreement, SPS measures include,

All relevant laws, decrees, regulations, requirements and procedures including, *inter alia*, end product criteria; processes and product methods; testing, inspection, certification and approval procedures; quarantine treatments including relevant requirements associated with the transportation of animals and plants, or with the materials necessary for their survival during transport; provisions on relevant statistical methods, sampling procedures and methods of risk assessment; and packaging and labelling requirements directly related to food safety' (Annex A (1)).

⁴ A familiar alternative term is 'the quarantine measures' (Anderson, McRae and Wilson 2001, p. 1).

There are notable differences between classical trade barriers (tariffs and quantitative restrictions) and product standards and regulations in terms the economic implications of their implementation/abolition. The latter are discriminatory border taxes, which generally result in inefficiency in resource allocation and reduce consumer welfare. It is now widely acknowledge in the economics profession that, except under very special circumstances, countries generally benefit from their removal or reduction, unilaterally or through collective effort. By contrast, in principal SPS standards are introduced by government in the interest of the society, to achieve the important social objective of protecting public, animal and pant health an to project the environment. In other words food-safety is a 'public goods' that would go largely unnerved in a private market (Kindleberger 1983). Social losses arising from their elimination could well exceed the associated economic efficiency gains.

In theory, establishment of SPS standards (or other technical standards) should facilitate trade through reducing transaction cost, by assuring consumers that the food they consume is of an acceptable standard and reducing the cost of uncertainty that they face in assessing product quality. Universally accepted standards should also guide exporters as to the expectations of importers concerning food quality and safety, leading to reduction in trade frictions. Standards can serve to signal quality abroad and thus contribute to increasing elasticity of substitution between similar goods produced in different countries, thereby permitting relatively more efficient producers to thrive through export expansion. Efficiency of production would be increased through standardization as it reduces information asymmetries between buyers and sellers, and promotes product commutability, thereby allowing for increased economies of scale and scope (Sykes 1995, Kindleberger 1985).

In practice, SPS standards can, however, become an impediment to trade for two reasons. First, importing countries may deliberately craft SPS measures that impose a cost or other disadvantage on foreign competitors to provide protection for domestic producers. Second even when comparable SPS measures are applied in developed countries to both domestic and imported products, they can act to impede imports from developing countries because of asymmetry in compliance cost.

As tariff barriers and other forms of border protection (e.g. quantitative import restrictions (QRs) and voluntary export restraints (VERs)) are progressively dismantled as part of the on-going multilateral and unilateral trade liberalisation initiatives, the temptation to use SPS standards (and other non-border measures) as protectionist barriers become greater. Given that SPS standards are less transparent than tariff or quotas, there is ample room for tweaking them to make them stronger than necessary for achieving optimal level of social protection and to twist the related testing and certification (conformity assessment) procedures to make competing imports less competitive.

There is indeed evidence that for agricultural products, and processed food in particular, non-tariff impediments to international trade stem predominantly from SPS regulations and that their incidence on world trade has begun to increase in recent year. Much of these studies deal specifically with SPS issued faced by exporters from developed countries (eg. Robers and DeRemer 1997, Weyerbrock and Xia 2000) Messerlin 2001). Among the few available studies of problems faced by developing countries, Otsuki, Sewadesh and Wilson (2000) provides a penetrating analysis of the trade impact of a 1998 EC regulation that raised the maximum permissible level of a certain type of aflatoxin (a toxic substance) in foodstuffs and animal feed to a higher level than international standards specified by the Codex Alimentarius. The results suggest that the EU standards, which would reduce health risk by approximately 1.4 death per billion a year would reduce exports by more that 60% or US670 billion from the 9 countries, as compared with regulation based on the international (Codex) standard.

There is evidence of some instances where standards prohibit trade altogether (Wilson 2002, p. 432). Change words. For example a EU regulation requires that diary products be manufactured from milk produced by cows kept on farms and milked mechanically. This regulation virtually precludes imports from many DC where milk production is by and large a smallholder activity. The EU recently invoked this regulation to band import of camel cheese from Mauritania, bringing hardship to a small enterprise, which developed the product at a considerable cost. Australian regulation. Australian quarantine regulation require that chicken meat imported from Thailand must be heated at 70 Celsius for 143 minutes to avoid the

possibility of carrying a certain disease. This has effectively closed the Australian market for Thai chicken exporter (It is said that the required heat treatment transforms chicken into paper!) (Nidhiprabha 2003, 4).

SPS standards can impede trade even when they are imposed on genuine health and safety considerations through additional compliance cost imposed on the foreign competitor. The existing food-safety standards have been designed by industrial countries to reflect their technology mix and consumer preferences, which may or may not be appropriate for developing countries. Upgrading existing standards or developing new ones and performing risk assessments is a costly and difficult procedure, and is neither technically feasible nor affordable for most developing countries (Michalopoulos 2001, Finger and Schuler 2001 and 2002). Resource, manpower and institutional constraints are naturally more binding for developing-country exporters compared to their developed-country counterparts. In addition, SPS standards sometimes diverge considerably across importing countries, making meeting standards costly and cumbersome for exporters. There are numerous costs associated with variability of standards across export markets and over time.

One useful source of information for gaining broader understanding of the relative performance of countries in meeting SPS standards is the record maintained (and publicly made available) by US Food and Drug Administration (FDA) on import shipments detained following its border inspection of shipments (in compliance with the Federal Food, Drug and Cosmetic Act). The information, for each shipment detained, includes the name/address of the exporter, the product and the reason for detention, and is available on a monthly basis (with a time lag of about two weeks) for the given month and the preceding eleven months.⁵ Detentions by the USFDA do not necessarily result in a complete loss of shipments. Most of the detained shipments eventually enter the US market after further testing and/or following treatment to bring them into compliance with US SPS requirements. But the cost of rejection at the border can be considerable, including loss of product value, transport and other costs, and costs of product re-export or destruction. More importantly, regardless of the

⁵ The data do not cover all food products imported to the US; meat and poultry products (which accounts for around a fifth of total annual food imports to the country) do not come under the preview of the USFDA compliance tests of the USFDA border inspection.

actual cost involved, detentions provide useful information on current practices of exporters relating to meeting SPS standards. Preliminary results from an analysis of USFDA detention records for fish products, fruits and vegetable imports⁶ over the twelve-month period from May 2001 to April 2002 in Tables 4 and 5.⁷

Table 4 provides data by trading partner country (exporting country) on total detentions, total value of food exports (excluding meat and paltry products) and export value per detention. The number of rejections for a given country is obviously influenced by the overall volume of its exports, in addition to its ability to meet SPS standards. We therefore use 'export value per detention' (total dollar value of exports divided by the number of detained shipments) as a relative measure (which adjusts to some extent for the volume effect) of inter-country differences in the ability to meet SPS standards. In a comparison among countries, a higher numerical value of the ratio would suggest a better performance in meeting SPS standards. The data clearly show the incidence of detention is greater on developing country imports relative to the trading significance of these countries compared to the developed countries. On average, developing country firms experienced a detention for every \$1530 thousand worth of imports to the US. This figure was much higher, over \$ 2300 thousand, for developed country firms. When developing countries are grouped by income level, export value per detention is found to be much lower (\$1152 thousand) for low-income countries compared to \$1661 thousand for upper-middle-income developing countries.

According to Table 5, most detentions of imports from developing countries are for 'insanitariness' (contamination with insects and rodent filth), followed by microbiological contamination, acidification, and pesticide residue violations. In other words, developing countries seem to face considerable problems in meeting even basic food hygiene requirements, not only requirements for which more sophisticated

⁶ These three products are chosen for two reasons. First they accounts for over 80 per cent of total food imports to the U.S. from developing countries. Second, an analysis of total detentions is likely to provide a misleading comparison of developed and developing country performance because of significant compositional differences in imports coming from the two groups of countries.

⁷ Tabulations were made for two one-year periods - April 1999-May 2000 and April 2001-May 2002 – to find that the over served patters of the incidence of detention across countries and the underlying causes of detention are almost identical. The results are therefore reported only for the latter period

monitoring and therefore more costly procedures are required (such as limits on pesticide residues and heavy metals). As is to be expected, exporters from developed countries do seem to pass the tests for basic hygiene requirements without any difficulty. Detention of imports from these countries seems to be for easily rectifiable reasons such as deficiency in labelling and provision of inadequate information.

The above inferences are generally consistent with those of some recent studies, which have looked at selected episode of trade disruption caused by SPS concerns of importing countries. For instance, during the period from August to December in 1997, the European Union banned fishery product imports from Bangladesh because of concerns about hygienic standards in processing facilities (Cato and Don Santos (1998). The estimated cost of the loss of revenue to shrimp processors as a result of the ban was \$14.6 million (35% of export earnings from that commodity in 1996). This episode points to the importance of supply side constraints in determining export success and the cost involved in setting up the institutional framework for maintaining required quality standards in low-income country like Bangladesh.

In January 1998, the EU imposed a similar ban on the importation of fresh fish and fish products from Kenya Mozambique, Tanzania and Uganda to safeguard EU consumers from the risk of cholera. The EU justified the ban on grounds of lack of a credible system in Kenya to safeguard the product from possible contamination. This move by the EU resulted in considerable export losses as the ban was imposed without giving exporting countries to put in place measures that eliminate the health risk and a time frame for compliance (Henson, Brouder and Mitullah 2000, Wilson 2002).

In 2000 India was desisted by the EU from the list of approved countries for import of egg powder because of because of high residue limits of pesticides and failure to submit acceptable residue monitoring plans. It took more than three years for 3 of the six exporting plants to restart exporting to the EU after upgrading plants to reach HACCP compliance. The total cost amounted to 5% of the total investment of the three plants. The other three (smaller) plants lost the EU market forever because

of their inability to meet the finances needed for upgrading the plants. In recent years the Indian sea-food and mango pulp industries have also faced similar SPS crises relating to their exports to the EU which resulted in significant export and employment losses (Mehta and George 2003).

Muata and Nyamandi (1998) assess the impact of SPS requirements on agricultural and processed food exports from African countries through a survey of CODEX Alimentarius contact points in these countries. Of the countries that responded, 57% indicated that export products had been rejected within the previous two years because of the failure to comply with health standards in importing countries. Microbiological contamination, spoilage and other forms of contamination were identified as the major courses. A series of survey-based studies undertaken by the Centre for Food Economics Research at the University of Reading on the problems faced by developing country exporters in the EU markets have identified SPS measures as the major demand-side impediment influencing the ability of developing countries to exploit export opportunities in developed-country markets (Henson and Loader 1999, Hansen and Loader 2001, Henson et al, 2000). These studies identify poor access to compliance resources, including scientific and technical expertise and finance, and a lack of awareness among officials about SPS requirements as major factors that impede importing countries ability to meet SPS standards.

So far we have considered the *aggregate* trade effects of SPS standards. In addition to constraining the realisation of full export potential, SPS standards can impact on the ownership and size distribution of firms in a given export industry with redistribution and efficiency implications. Relatively large companies are naturally better placed to undertake additional investment needed for meeting international SPS standards. Moreover firms with foreign capital participation are likely to be better placed to meet SPS standards and/or to get around stringent standards compared to purely locally owned firms (Silva 2001). There is evidence that industrial adjustment triggered by recent SPS crises in India, Bangladesh and Thailand made many small- and medium-scale firms bankrupt while strengthening the relative position of large scale firms in the affected industries (Cato and Don Santos 1998, Mehta and George 2003, Nidhiprabha 2003).

4. The WTO Mechanism for Food Safety Regulation and Monitoring

The Sanitary and Phytosanitary (SPS) Agreement, which forms a part of the WTO Agreement signed in 1994, aims to lay a firm foundation for strengthening multilateral discipline in the implementation of food-safety standards (SPS standards) in agricultural trade, with a view to achieving the objective of protecting consumers while regulating the use of these standards as means of non-border trade protection. It superseded the original Article XX of the GATT, which remained virtually inactive in achieving this objective owing to unclear/restrictive provisions and the lack of an effective institutional framework for implementations. The text of the SPS Agreement (unlike original GATT Article XX) is part of the mandatory portion of the WTO Agreement and therefore all WTO members are bound by it (Jakson 1997, 223-24).

Legal and Institutional Provisions

The promulgation of the Agreement was prompted by legitimate concern about the possibility that removing conventional trade restrictions on imports of agricultural products has the potential to tempt countries to use SPS standards as a new form of protection. The agreement aims to keep to a minimum the trade effects of government actions aimed at protecting human, animal and plant health. It requires importing countries to demonstrate that their SPS measures are based on scientific grounds and are applied equally to domestic and foreign producers. This provision puts the WTO on the side of those exporters who comply with the importing country's SPS measures.

In order to harmonize sanitary and phytosanitary measures as wide a basis as possible, the Agreement encourages members to base their measures on international standards, guidelines and recommendations where they exist, most notably the Codex Alimentarius, the International Office of Epizootics (OIE) and the International Plant Protection Convention (IPPC). The Agreement, however, affirms the rights of Members to adopt SPS measures (Article 2). But Members are responsible for ensuring that a measure is applied 'only to the extent necessary' to protect human, animal or plant life or health and is based on scientific principles and evidence.

Members are however allowed to adopt SPS measures ‘on the basis of available pertinent information’ when ‘relevant scientific evidence is insufficient’, pending a more objective evaluation based on fuller evidence within a reasonable time (Article 5.7). Moreover, it is expected that Members would accept the sanitary and Phytosanitary measures of others as equivalent if the exporting country demonstrates to the importing country that its measures achieve the importing country’s appropriate level of health protection. The Agreement recognises that SPS risk do not correspond to national boundaries, there may be areas within a particular country that has lower risks than others, determined by factors such as geography, ecosystems, epidemiological surveillance, and the effectiveness of SPS controls, including pest- or disease-free areas and areas of low pest or disease prevalence.

In order to achieve transparency in SPS standards adopted by different countries, Members are required to publish and notify the SPS Secretariat of all proposed and implemented SPS measures. This information is relayed via the ‘Notification Authority’ within each Member government. Moreover, Members are required to establish an “Enquiry Point”, which is the direct point of contact for any other Member regarding any question about SPS measures or relevant documents.

The Agreement provides for the settlement of disputes between Members regarding the legitimacy of SPS measures that affect trade through the general Dispute Settlement Mechanism (DSM) of the WTO. (The dispute settlement system of the GATT was generally considered to be one of the cornerstones of the multilateral trade order. The Uruguay Round Understanding on Rules and Procedures Governing the Settlement of Disputes has further strengthened the GATT system significantly) The Dispute Settlement Unit (DSU) at the WTO provides an integrated system for WTO Members to base their claims on any of the multilateral trade agreements included in the Annexes to the Agreement establishing the WTO. The DSU emphasizes the importance of consultations in securing dispute resolution, requiring a Member to enter into consultations within 30 days of a request for a consultation from another Member. Where a dispute is not settled through consultation, the DSU requires establishment of a panel, at the latest, at the meeting of the DSB following that at which a request is made, unless the DSB decides by consensus against establishment.

The DSU contains a number of provisions taking into account the specific interests of the developing and least-developed countries.

In principle the SPS Agreement should help facilitate trade from developing to developed countries by improving transparency, promoting harmonization and preventing the imposition of arbitrary SPS standards. Much of this depends, however, on the ability of developing countries to participate effectively in the Agreement. For this reason, the Agreement itself tries to facilitate effective participation of the developing countries in the Agreement by encouraging developed-country members to provide technical assistance (Article 9) and according special and differential treatment these countries (Articles 10):

Article 9:

Technical Assistance

1. Members agree to facilitate the provision of technical assistance to other Members, especially developing country Members, either bilaterally or through the appropriate international organizations. Such assistance may be, *inter alia*, in the areas of processing technologies, research and infrastructure, including in the establishment of national regulatory bodies, and take the form of advice, credits, donations and grants, including for the purpose of seeking technical expertise, training and equipment to allow such countries to adjust to, and comply with, sanitary and phytosanitary measures necessary to achieve the appropriate level of sanitary or phytosanitary protection in their export markets.
2. Where substantial investments are required in order to for an exporting developing country Member to fulfil the sanitary or phytosanitary requirements of an importing Member, the later shall consider providing such technical assistance as will permit the developing country Member to maintain and expand its market access opportunities for the product involved.

Article 10

Special and Differential Treatment

1. In the preparation and application of sanitary or phytosanitary measures, Members shall take account of the special needs of developing country Members, and in particular of the least-developed country Members.
2. Where the appropriate level of sanitary and phytosanitary allows scope for the phased introduction of new sanitary or phytosanitary measures, longer time-frame for compliance should be accorded on products of interest to developing country Members so as to maintain opportunities for their exports.
3. With a view to ensuring that developing country Members are able to comply with the provisions of this Agreement, the Committee [that is, The Committee on Sanitary and Phytosanitary Measures at the WTO, established under Article 12 of the SPS Agreement] is enabled to grant to such countries,

upon request, specified, time-limited exceptions in whole or in part from obligations under this Agreement, taking into account their financial, trade and development needs.

4. Members should encourage and facilitate the active participation of developing country Members in the relevant international organizations.

In addition, the Dispute Settlement Understanding (DSU) of the WTO (which relates to dispute settlement under all WTO agreements) contains special clauses requiring special and differential treatments for developing countries. Article 4.10 of the DSU stipulates giving 'special attention' to the particular problems and interests of developing countries Article 27.2 requires provide technical assistance for them with a view to facilitate their effective participation in the dispute settlement mechanism.

Implementation

The achievement of the WTO SPS mechanism over the past seven years of its implementation in enforcing an effective discipline over the use of SPS measures have certainly lagged behind original expectations (WTO 1999, 1998, Roberts 1998, Hoekman 2002). A number of problems have come up in the process on implementation of the Agreements. The Agreement allows too much latitude to importing countries in adopting SPS measures, allowing them to impose measures that impede imports, no matter how unlikely or how inconsequential the risk involved. Further, many of the provisions in the SPS Agreement pose problems in their interpretation and application. For instance, the requirement that Members may adopt more stringent measures if they can base them on 'sound science' is a vague provision which assumes that there exist a *single objective* and a *correct view* of any scientific issue (Wirth, 1997, p. 827). These problems have raised serious doubts about the efficacy of the whole dispute settlement mechanism in solving SPS-related trade disputes (Hurst 1998). It is belied that this uncertainty have prevented many countries from further pursuing SPS issues beyond the point of discussion at the SPS committee stage.

The developing countries have so far failed to participate in the implementation of the Agreement remains as equal partners (OECD 2002, Finger and Schuler 2002, Michalopoulos 2001, Hoekman 2002). Reflecting these constraints, the formal compliance

for the SPS Agreement has so far been less than 60% of the total developing country membership of the WTO. Half to two-third of developing country members have not participated in the discussion at SPS Committee meeting (OECD 2002).

To benefit from the trade rules of the SPS Agreement, developing countries have to set up an appropriate set of institutions, including setting up 'enquiry points' to enhanced access to their markets. This is excessively costly for many developing countries. Based on World Bank project experience over the past five years in helping a number of developing countries to build their capabilities in this area, the authors observe that financial resources needed to implement the WTO rules would amount to 'an entire year's development budget' for most of the developing and transitory economies' (Finger and Schuler, 2000, p. 511).⁸ Even after making these initial institutional investments, the ability of a developing country to participate effectively in the WTO dispute settlement process is constrained by its low level of technical, scientific and legal capacity for mounting or defending a case in the dispute process. Benefiting from the DSM requires specialist knowledge in international law, which is absent in most developing countries, and employing international lawyers is an extremely costly proposition.

The Dispute Settlement Understanding of the WTO is regarded as one of the positive outcomes of the Uruguay Rounds, making a move towards a more 'automatic' and 'rule-oriented' system (Jackson 1997, 133-37). However, the experience with the dispute settlement process over the past five years clearly suggests that developing countries do not enjoy a 'neutral' playing field. They are less well equipped to participate in the process because of the lack of people with the appropriate training and experiences, and financial constraints. 'Much of the causes in the DSU regarding developing countries have proved to be more declarative than operative and no initiatives have been taken to pay attention to the particular problems and interests of the developing countries (Delich 2002, 73)..

⁸ The cost of achieving disease- and pest-free status required for Argentina to export meat, vegetables and fruit is estimated to have been \$82.7million over the period 1991-96. The cost of upgrading hygiene standards in slaughterhouses in Hungary over 1985-91 is estimated as \$41.2 million.

As already noted, the SPS Agreement itself tries to facilitate effective participation of the developing countries in the Agreement by encouraging developed-country members to provide technical assistance (Article 9) and according special and differential treatment to developing countries (Articles 10). However, developed countries have not as yet taken any notable initiative to assist developing countries along these lines. International organisations, such as the UNCTAD, the ITC and the World Bank, have begun to provide technical assistance to developing countries to develop their institutional capacities to meet food-safety standards to comply with the SPS Agreement. These initiatives are, however, at the formative stage and the total technical and financial support provided remains rather small compared to the actual requirements. Apart from the financial constraint, a major problem faced by these organisations is the paucity of information on various dimensions of the issues at hand. There are also concerns about the length of time given between the notification of new SPS measures and their application, and about delays and perceived developed-country bias involved in the standards setting mechanism under the CODEX.

5. Concluding Remarks

The SPS Agreement and the related dispute settlement mechanism of the WTO are an important first step in strengthening the global trade architecture, in bringing in greater transparency and orderly conditions to world food trade. However, the implementation of new trade rules has turned out to be more complex compared to the traditional market access tasks undertaken by the WTO. In particular, developing countries have not been effective participants because delegates from developing countries had lower scientific and technical know-how compared with those from developed countries. Although the Agreement stipulates that developed countries will provide developing countries with technical support to cope with supply-side constraints to meet SPS standards, so far no concrete attempts have been made in this direction.

Unlike conventional trade policy reforms, SPS regulations cannot be implemented simply through legislative declaration. For their effective implementation in developing countries, efforts must be made to obtain binding commitments to provide adequate financial and technical assistance. In particular, there is a need for a global framework to support national capacity building and improve the design of international standards. By its very nature, the WTO does not have the capacity to play a large role in dealing with supply-side and institutional constraints confronting low-income countries. Concerted multilateral efforts outside the WTO are needed to mobilise additional financial and technical assistance. As Hoekman has powerfully argued in a recent article this is an area where there is a clear need for providing ‘aid for trade’ (Hoekman 2002).

The role of international initiatives in making developing countries effective participants of a rule-based world trading system should not however be overstated. International initiatives are not a substitute for appropriate national action. Implementation of SPS standards should be seen as an integral part of establishing the basis business environment in the domestic economy. As we have already noted, some developing countries have done much better than many other in world food trade regardless of continuing disarray in the world trading system. While trying to reap benefits from international initiatives, individual countries should also try to learn from the experiences of their relatively more successful counterpart.

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Table 1: World Merchandise Exports, 1970-1999 (selected years)

		Developed Countries	Developing Countries	Total
(1) Total exports	1970	218.9	38.6	257.5
	1980	1208.2	241.8	1450
	1990	2360.5	539.2	2899.7
	1995	3305.6	1054.3	4359.9
	1999	3564	1244.2	4808.2
(2) Manufacturing (SITC 5 through 8 less 68)	1970	160.8	10.5	171.3
	1980	896.6	111.1	1007.7
	1990	1903	380.6	2283.6
	1995	2649.3	819.1	3468.4
	1999	2964	1015.3	3979.3
(3) Agro-food products Including food processing (SITC 0+1+2+4-27-28)	1970	37.5	20.9	58.4
	1980	187.4	87.2	274.6
	1990	286.3	108	394.3
	1995	383.5	166.2	549.7
	1999	349.2	156.4	505.6
(4) Processed foods*	1970	16.9	6.7	23.6
	1980	88.2	34.3	122.5
	1990	155.5	51.1	206.6
	1995	220.4	85	305.4
	1999	212.6	81.8	294.4
(b) Selected Indicators of Export Composition (%)				
(6) Share of Manufacturing in total exports	1970	73.5	27.2	66.5
	1980	74.2	45.9	69.5
	1990	80.6	70.6	78.8
	1995	80.1	77.7	79.6
	1999	83.2	81.6	82.8

Table 1 Continue

(7) Share of Processed food in total exports	1970	7.6	11.9	8.5
	1980	7.1	5.9	6.6
	1990	6.4	7	6.5
	1995	6.5	6.9	6.6
	1999	5.8	5.6	5.8
(9) Share of processed food in agro-food products (including Processed food)	1970	29.1	23.8	27.4
	1980	47.1	39.4	44.6
	1990	54.3	47.3	52.4
	1995	57.5	51.2	55.6
	1999	60.9	52.3	58.2

Note:

* Processed food items were identified using a commodity concordance linking Standards International Trade Classification (SITC) and International Standards Industry Classification (ISIC). All 5-digit items in SITC divisions 0: food and beverages and 4: vegetable oils which are included in the ISIC classification system are treated as processed food. For details see Athukorala and Sen (1998).

Source:

Compiled from UN trade data (Series D) tapes held in the International Economic Data Base of the Australian National University.

**Table 2: Composition of processed food exports from developing countries
(percentage shares)**

Categories of processed food	1970	1980	1990	1995	1999
Processed meat products	18.5	11.6	12.9	11.7	9.8
Diary products	0.4	0.6	1.0	1.1	1.6
Fish and fish products	8.9	16.4	29.4	30.0	30.1
Flour and cereals	1.2	1.6	2.3	3.4	3.9
Fresh and preserved fruits	4.5	4.7	8.2	5.7	6.8
Fresh and preserved vegetables	2.7	4.1	5.2	4.7	4.8
Fresh and sugar and molasses	31.5	34.2	11.4	10.2	9.1
Coffee extracts, cocoa, and chocolates	3.0	5.3	3.0	3.0	3.0
Preserved animal feeds	13.7	11.0	11.6	8.6	7.9
Margarine and food preparations	0.8	1.3	1.9	2.8	4.0
Beverages, alcoholic and non-alcoholic	4.0	1.9	3.0	3.9	5.3
Animal oils	1.1	0.3	0.1	0.2	0.1
Vegetable oils	9.8	7.0	10.0	14.5	13.6
Total export value of food processing (million USD)	61322	32205	46392	73567	71518

Source : Compiled from UN trade (Series D) data held in the International Economic Data Base of the Australian National University.

Table 3 : Processed food exports and growth rate of exports by category

	Processed food				Annual compound growth (1980-99)			
	1980 Mil \$	%	1999 Mil \$	%	Processed food	Primary products	Agricultural products	Manufac- turing
Low-income countries								
Burundi	1	0.0	1	0.0	2.7	2.6	2.6	5.2
Bangladesh	46	0.2	350	0.6	15.1	0.3	6.7	11.7
Cameroon	104	0.5	184	0.3	7.0	7.0	5.1	5.8
Ghana	82	0.4	138	0.3	4.9	2.4	2.5	6.5
Honduras	91	0.5	125	0.2	8.8	3.4	4.4	9.4
India	768	3.9	2376	4.4	8.4	6.5	7.3	11.3
Ivory Coast	413	2.1	645	1.2	9.2	7.1	7.2	8.5
Kenya	86	0.4	215	0.4	8.8	6.5	6.8	9.2
Madagascar	41	0.2	27	0.1	0.7	-0.7	-0.7	5.0
Nicaragua	68	0.3	179	0.3	6.4	2.6	3.8	4.6
Nigeria	134	0.7	21	0.0	-4.3	10.4	-5.1	0.3
Pakistan	102	0.5	305	0.6	6.9	3.1	3.7	9.4
Sri Lanka	23	0.1	142	0.3	6.5	3.9	3.9	17.7
Sudan	99	0.5	117	0.2	5.6	1.9	0.7	6.4
Senegal	192	1.0	44	0.1	-2.4	4.7	-1.2	3.2
Tanzania	34	0.2	164	0.3	7.3	2.4	3.5	5.7
Zambia	23	0.1	17	0.0	4.6	10.8	8.6	-2.4
Middle-income countries								
Bolivia	59	0.3	220	0.4	19.5	4.5	13.1	7.4
Colombia	310	1.6	805	1.5	9.6	8.5	5.9	12.9
Costa Rica	96	0.5	516	1.0	11.2	7.5	8.2	15.5
Dominican Republic	365	1.8	435	0.8	4.1	4.6	4.0	12.3
El Salvador	55	0.3	217	0.4	8.3	2.9	3.9	7.8
Guatemala	168	0.8	480	0.9	9.2	6.5	6.9	8.5
Indonesia	723	3.6	3947	7.3	14.6	10.1	9.0	21.6
Peru	357	1.8	1017	1.9	3.1	5.4	3.8	5.1
Philippines	1631	8.2	1650	3.1	5.2	4.3	4.4	15.7
Thailand	826	4.2	6611	12.3	17.0	9.6	10.9	20.9
Tunisia	51	0.3	239	0.4	8.7	7.0	8.3	15.7
Turkey	418	2.1	2072	3.8	10.0	7.1	7.6	17.6
Upper-middle-income countries								
Argentina	1345	6.8	5890	10.9	11.3	7.0	7.1	11.8
Brazil	5450	27.5	7873	14.6	10.0	6.4	7.1	13.4
Chile	459	2.3	2973	5.5	16.2	11.8	14.8	7.8
Korea	1133	5.7	2245	4.2	12.6	14.8	12.1	19.1
Mexico	955	4.8	3751	7.0	9.3	12.4	9.2	18.5
Malaysia	1564	7.9	6036	11.2	12.7	7.6	7.5	17.4
Taiwan	1425	7.2	1475	2.7	7.8	9.9	7.8	16.5
Uruguay	135	0.7	434	0.8	12.1	5.8	6.9	10.7
Total Sample Countries	19834	100.0	53940	100.0	9.7	7.9	7.2	15.1
All developing countries	34347		81828		8.7			

Source : Compiled from UN trade (Series D) data held in the International Economic Data Base of the Australian National University

**Table 4 : Import Detentions by the US Food and Drugs Administration:
Number of Detentions, Total Value of Imports* and Import Value
per Detention of Fish Products, Fruits and Vegetable Imports, May 2001-April 2002***

		Detentions		Realized imports		Import value per detention (\$ '000)
		Number	%	Value, (\$ Million)	%	
1	Developing countries	6660	78.4	10222	70.5	1535
1.1	Low income countries	763	9.0	1173	8.1	1537
	(Excluding Honduras)	(722)	(8.5)	(832)	(5.7)	(1152)
1.2	Middle income countries	3232	38.0	4623	31.9	1430
1.3	Upper-middle income countries	2665	31.4	4427	30.5	1661
2	High Income countries	1835	21.6	4281	29.5	2333
3	All countries	8495	100	14503	100.0	1707

Notes

* Countries are classified using the World Bank's income-based classification system.

** Honduras seems to experience a relatively low detention rate because its major export product, banana, is less susceptible to SPS violations compared to other food items covered in this tabulation.

Source : Compiled using data for import detention from US Food and Drugs Administration, OASIS Website (<http://www.fda.gov/oasis>) and data for Export to US from US International trade commissions, USITC Website (dataweb.usitc.gov)

Table 5: Detention of Imports of by the USFDA: Percentage Distribution of Shipments of Fish Products, Fruit and Vegetable Detained During May 2001 – April 2002 (%)

Product/cause of detention	All countries	Developed countries	Developing countries
Unsafe additive	1.8	0.6	2.0
Poisonous & deleterious matter	12.2	8.5	12.8
Contamination	17.3	1.4	20.1
Insanitariness	25.0	13.6	27.0
Acidification	11.2	22.2	9.3
Under-processed	1.8	0.5	2.0
Inadequate information	12.2	35.5	8.1
Deficiency labeling	11.7	13.3	11.4
Others	6.9	4.4	7.3
Total	100	100	100

Source : Compiled using data from US Food and Drugs Administration, OASIS Website (<http://www.fda.gov/oasis>)