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The **E15** Initiative

STRENGTHENING THE GLOBAL TRADE SYSTEM



Agriculture, Trade and Food Security Challenges

Proposals and Analysis

December 2013

E15 Expert Group on
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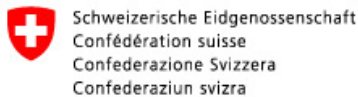
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For more information on the E15, please visit www.e15initiative.org

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CONTENTS

Introduction. <i>By Ricardo Meléndez-Ortiz and Ellen Terpstra</i>	1
1. Has the Treadmill Changed Direction? WTO Negotiations in the Light of a Potential New Global Agricultural Market Environment <i>By Seth Meyer and Joseph Schmidhuber</i>	3
2. Do Yesterday's Disciplines Fit Today's Farm Trade? <i>By Jean-Christophe Bureau and Sébastien Jean</i>	18
3. Trade and Food Security <i>By Bipul Chatterjee and Sophia Murphy</i>	30
4. Agricultural Trade and Food Security: Some Thoughts About a Continuous Debate <i>By Eugenio Diaz-Bonilla</i>	39
5. International Trade Disciplines and Policy Measures to Address Climate Change Mitigation and Adaptation in Agriculture <i>By David Blandford</i>	61
6. Transparency and Monitoring in Agricultural Trade: Policy Options for the Post-Bali Agenda <i>By Timothy Josling</i>	70
About the Authors	78
List of Expert Group Members	80

INTRODUCTION

THE E15INITIATIVE

Today's multilateral trading system is mired in a plethora of critical, impending issues. Ensuring food security in times of high and volatile prices, addressing concerns around natural-resource scarcity, or scaling up sustainable energy production and diffusion, are just a few of them. The fragmentation of production through highly complex global value chains also poses challenges at the analytical and policy level. In the meantime, preferential trade agreements continue to proliferate and have now become the de facto locus to deepen integration and further liberalization. In the face of the Doha deadlock, some have questioned the way in which negotiations are conducted, arguing that the established practices of decision-making in the World Trade Organization (WTO), such as the notion of single undertaking, are ill-suited to the fast-changing challenges of our times.

In light of these challenges, the E15Initiative is a process aimed at exploring possible futures for the multilateral trade system. Launched in 2012 by the International Centre for Trade and Sustainable Development (ICTSD), the initiative engages top global experts and institutions in thinking ahead on critical issues facing the multilateral trading system, bringing fresh ideas to the policy environment, and solutions and opportunities for governance reform.

WITHIN THIS PAPER

This paper is a compilation of the material that has been produced by the Expert Group on Agriculture, Trade and Food Security Challenges. The Expert Group is convened by ICTSD alongside the International Food and Agricultural Trade Policy Council (IPC) to explore the many changes facing the global food trading system and their implications for sustainable development. Its objective is to develop concrete policy options the multilateral trading system could employ to positively impact agriculture trade and improve food security, especially for the poorest global citizens.

The overview paper that appears first in this compilation sets the context for the expert group's dialogue. It looks at the conditions under which the global food market became supply constrained, throwing food security into question, especially for the poorest nations. It then examines the implications for trade negotiations where policy shifts have not yet taken place as the Doha Round agreements focus on protecting producers. The overview paper advocates a

twin-track approach to ensure that trade policy measures help protect consumers from the negative impacts of higher and more volatile prices and, at the same time, enable small producers in developing countries to harness the benefits of higher prices.

Several major ideas took root during the first group meetings. Experts from the group were asked to expand upon these concepts in papers that delve into the rationale behind specific ideas for reforming the way the multilateral trading system deals with agriculture.

The second paper in this compilation, "Do Yesterday's Disciplines Fit Today's Farm Trade?", is an issue paper by Jean-Christophe Bureau and Sébastien Jean that addresses the challenges and policy options for agriculture at the Bali Ministerial Conference (MC9). The authors argue that in view of the current challenges such as export restrictions, price fluctuations, biofuel policies, climate change and so on, agricultural negotiations need to be significantly refocused, and in some cases rescaled.

Next comes a think piece by Bipul Chatterjee and Sophia Murphy, "Trade and Food Security." The authors emphasize that international trade in agricultural commodities needs better rules, as the Doha Agenda has been overtaken by time and events. Looking at the Doha Agenda, the authors assert that there are many issues on which governments could advance if they were to focus on confidence-building and ensuring that governments can protect their food security interests while working within a multilateral trading system.

The fourth is a piece by Eugenio Diaz-Bonilla, "Agricultural Trade and Food Security: Some Thoughts about a Continuous Debate." Diaz-Bonilla looks at the challenges that have created the recent global food shortages, and deals with the conceptual issues behind food security, the high food prices in the present and for the future, the links between energy, biofuels and food prices, and climate change. Also, the means by which food security has been discussed in the Uruguay and Doha rounds and the WTO disciplines for dealing with food security are reviewed.

The following think piece, "Climate Change Mitigation and Adaptation," by David Blandford, is an in-depth analysis of the implications of climate change policies on agriculture and trade. He surmises that there is a need for greater international consensus on what domestic policy measures are likely to be effective for tackling the effects of climate change in agriculture and are also the least trade-distorting. Blandford recommends setting priorities for dealing with climate change in current trade negotiations.

In the final piece by Tim Josling, "Transparency, Monitoring and Surveillance," the importance of transparency for a well-functioning agricultural trade system is highlighted. After reviewing the mechanisms in which transparency could improve food and agriculture markets, Josling makes a series of recommendations for constructive changes to the

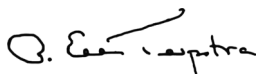
Agreement on Agriculture as part of the Doha Round at the Bali Ministerial Conference.

The work of the E15 Expert Group on Agriculture, Trade and Food Security Challenges offers a strong, innovative set of ideas for reforming and improving how agriculture is managed in the multilateral trading system. The pieces within this compilation are initial concepts that offer insight into the thoughts and discussions of the leading experts that make up the working group. While the ideas presented here reflect only the views of their respective authors, together they begin to paint a better picture of the possible direction in which the multilateral trading system could evolve to manage trends of the current and future global marketplace.

Further information on the functioning of the expert group, the experts, and the latest developments within the E15Initiative can be found at www.e15initiative.org.



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HAS THE TREADMILL CHANGED DIRECTION? WTO NEGOTIATIONS IN THE LIGHT OF A POTENTIAL NEW GLOBAL AGRICULTURAL MARKET ENVIRONMENT

Josef Schmidhuber and Seth Meyer

THE TRADITIONAL PARADIGM: AGRICULTURE IN A DEMAND-CONSTRAINED ENVIRONMENT

For decades, agricultural commodity markets have been characterized by Cochrane's treadmill in which, with each advancement in technology, supplies shift out, pressing against an inelastic demand (Cochrane 1958). Food demand for crops shifted outward with population and income growth around the world, but not at a sufficient pace to keep up with the productivity growth of several primary agricultural commodities.

The result was a trend of declining real crop prices for nearly a century. Under such circumstances, the benefits of technological progress – through increased productivity and falling production costs – were passed on to domestic consumers as well as to trading partners through lower prices and abundant supplies. As a result of these productivity gains, per capita calorie consumption rose in all countries, while the percentage – and often even the absolute number of chronically hungry people – declined. The FAO State of Food Insecurity 2013 reports that the share of undernourished people in developing countries fell from 23.6 percent in 1990–92 to 14.3 percent in 2011–13 (SOFI 2013). Over the longer-term, the results are even more impressive with a decline from 36 percent in 1969–71 (Alexandratos 2000), even if longer time series do not provide fully comparable points in time.

The FAO outlook to 2050 suggests an unabated continuation of these trends. Growth in food demand is expected to slow further with growth falling from 170 percent over the last 45

years to 60 percent in the next 45 years, rising population, accelerating urbanization and further income growth notwithstanding. Slower growth in food demand also means slower growth in resource pressure. Total arable land in use, for instance, expanded by 0.28 percent p.a. from 1961 to 2007; land expansion is expected to slow to 0.10 percent p.a. by 2050. At the same time, irrigation water withdrawals are expected to rise from 2,761 cubic km to 2,926 cubic km by 2050. The outlook suggests that future food needs could be met with roughly the same number of hectares and only marginally more water pumped for irrigation.¹

AGRICULTURAL POLICY RESPONSE TO THE TRADITIONAL PARADIGM

Abundant supplies resulted in falling real prices for agricultural commodities and exerted downward pressure on farm incomes. Policy-makers in developed countries aimed to arrest this downward pressure on prices and incomes by enacting various forms of price support, buffer stock programmes, or acreage set-aside schemes. While these measures succeeded in accomplishing their objectives in domestic markets, they also induced surpluses that had to be disposed of in international markets, with the effect of further lowering world prices. Fear of a competing process of supporting, stocking and subsidized exports by a small number of developed countries eventually gave rise to the Uruguay Round Agreement on Agriculture and a continuation of these negotiations under the Doha Development Agenda (DDA). The main objective of these negotiations was to reduce export subsidies, enhance market access, and circumscribe domestic support. Naturally, little attention was paid to ensuring that export flows were given abundant supplies. With low prices and abundant world stocks, such contingencies seemed unwarranted.

A NEW PARADIGM? LIFTING THE DEMAND CONSTRAINTS?

An inspection of actual demand growth over the past seven years, however, suggests that this analysis of food and feed demand alone is unlikely to capture the entire demand dynamics of future agricultural markets. Higher energy prices and policies to promote the use of agricultural products for biofuel production have established a new dynamic in the traditionally slow-growing food markets. These factors also pose the question as to whether a fundamental examination of the previous demand-constrained market paradigm is warranted.

¹ In some regions, even modest increases in withdraws could put existing water resources under additional stress.

THE RISE OF BIOFUELS: NEW, POTENTIALLY HIGH DEMAND FROM THE ENERGY SECTOR

Modern biofuel policies originated in the oil shocks of the 1970, followed by the return to a steady decline in real commodity prices. Brazil supported the development of a domestic sugarcane-based ethanol production industry and encouraged the creation of the needed consumer infrastructure. In subsequent years, the decline in oil prices weighed heavily on its profitability. During this same period, the US used its most readily convertible feedstock – maize – to embark on a similar strategy. Historically, policy support in both countries has been substantial, with a gradual move from subsidization to mandates or use requirements, shifting the burden from taxpayers to motor fuel consumers. The liberalization of Brazil's ethanol market occurred towards the end of the 1990s, although some tax preferences remain along with the minimum blending requirement, currently 25 percent in all petrol and some effort by the Brazilian government to keep the petrol price in blending below its market value. The US instituted direct subsidies to fuel blenders in the 1980s, which only expired at the end of 2011,² leaving a system of mandates – established in 2005 and expanded in 2007 – as the most visible and "important" means of support (Thompson et al.).

FROM AN ENERGY USER TO AN ENERGY PRODUCER

Prior to the recent biofuel boom, the largest direct effect of energy markets on agriculture markets was through input costs, with the agricultural sector being a large energy user for both farm and supply chain operations, as well through the use of nitrogen fertilizers derived from natural gas. Demand from the energy market through the production of biofuels and biomass for electricity generation presents a fundamentally different potential market for agricultural commodities as the size of the world energy market dwarfs the current renewable energy production from agriculture. Of course, the use of agricultural commodities for energy production is not new. In various forms, crops and production residues have contributed to the energy sector from the simple direct burn of commodities and crop residues to their more recent large-scale conversion to liquid fuels for use in the transport sector.

The use of agricultural commodities in the production of biofuels, among other factors, has increased commodity prices in recent years (Abbott et al. 2008, 2009; Dewbre et al. 2008; EC 2008; ERS 2008; IFPRI 2007; Meyers and Meyer 2008; OECD-FAO 2008, 2010; World Bank 2008; Westhoff 2010), but the relative size of both markets and the extent to which current policy actually supports prices is key to understanding potential future demand. If demand were purely policy-driven, such policies could be managed in the same way as historic buffer stock programmes that maintain commodity price stability to support and smooth farm income at the expense of higher commodity prices to consumers (for more on potential policy options, see Box 1). The elasticity of demand would be reduced, but stability

would be achieved. Indeed, biofuel policies originally envisioned that biofuels would play that exact role through market demand.

The current situation, however, might offer a different picture of future demand than that seen historically and envisioned in the FAO's long-run outlook. With the expiration of the ethanol blender subsidy in the US and in the midst of the of one of the worst droughts in half a century, there were assertions that, at the time, a waiver of the existing use mandate would have had little immediate effect on reducing demand for ethanol and therefore ethanol prices.³ To a point, biofuel production has grown and, given the size of the energy market, a long-run link has been established between the two markets, which potentially provides significant long-run demand elasticity to commodity markets (De Gorter and Just 2008, Balcombe and Rapsomanikis 2008).

In a scenario of large-scale market demand for energy production inputs from agriculture to produce liquid motor fuels, petroleum prices set a long-run floor under feedstock prices and bioenergy competes with stockholding as the regulating mechanism for prices, with notable differences. Depending on the underlying price of energy, biofuels can replace stockholding as the mechanism to establish a commodity floor price. In addition, depending on the long-run price of oil, they could also serve to keep agricultural commodity prices high. This would ensure the market was in a perpetual stock-out and exposed to short run supply crunches, relying on competitive bidding between food and energy markets to resolve the allocation of remaining stocks.

HOW COULD BIOENERGY CHANGE THE TRADITIONAL MARKET OUTLOOK?

With the infrastructure in place, the improvements in processing technology and the high oil prices, biofuels now appear to be far more competitive, even in the absence of subsidies. Should current petroleum – or, more broadly, energy prices – be a harbinger for the future, the downward pressure on agricultural commodity prices could be a matter of the past. Such linkages could see an increased elasticity of demand which, over a range, would show an increased sensitivity to prices and thus potentially stabilize commodity prices. However, the agriculture sector would also inherit the volatility of the energy and petroleum markets, as the stabilized price range varies depending on the prevailing prices in the energy sector. This new setting poses a number of questions (see Box 1).

How elastic is the agricultural supply in the long run with respect to traditional commodity demand? With the potential addition of demand for renewable energy production, what

2 | The biodiesel blenders' credit of \$1.00 per gallon expired at the end of 2013, although reinstatement has been proposed.

3 | See Irwin and Good 2012.

are the prospects for agriculture to deliver additional output to return prices to a downward path? It has been suggested that the supply curve may become steeper and that shifts to the right (growth in area and yields) may be more constrained in the future while the size of the energy market and a potentially highly elastic long-run demand to produce energy would significantly change the supply and demand paradigm, moving away from Cochran (1958) towards Jevons (1865) where energy and bio product uses (paints, starch, detergents) absorb any “excess” production, keeping markets tight and prices elevated.

The impact of the increased elasticity of demand also has significant implications for agricultural land and input use as well as associated greenhouse gas (GHG) emissions. On a global scale, the low historical elasticity of demand for agricultural outputs meant that technological advancements were considered “land-saving”. Hertel (2012) further explores the issue in the context of technological change and land use (instead comparing Jevons (*op. cit*) to Borlaug). The examination shows that regional differences in supply and demand elasticities, coupled with regional improvements in technology, lead to varying changes in agriculture land area. Coupled with local land emission efficiencies, technological improvements may not lead directly to reduced GHG emissions. While much effort has been made to examine technological improvements in supply, the implications both for land use and GHG emissions from an increase in demand elasticity through the coupling of energy and agricultural markets is apparent.

High energy and bio product prices may result in a general shift in the agricultural product paradigm (from Cochran to Jevons). If energy prices were to continue to rise in the long run, the energy market would be large enough to create (perfectly) elastic demand for agricultural products and thus siphon off any additional surplus of agricultural products. This would happen as long as the price for biofuel feedstock remains below its parity price equivalent (break-even price) in the petroleum market. In this case, the energy price would function as a floor price for food and agricultural markets (Schmidhuber 2006). As a consequence, agricultural prices would follow energy prices, at least in the long run. When it comes to the use of natural resources, energy demand would exert additional pressure on the resources needed for food production. A potentially more problematic consequence is that technological progress would lose its resource-saving effect and become resource-destroying. With elastic demand, every reduction in production costs would mean that more hectares of land are economically viable for biofuel production and add to cropland expansion. The expansion of cropland would also take an added toll on water, biodiversity and other natural resources.

LINKING THE NEW MARKET ENVIRONMENT TO CHANGES IN TRADE NEGOTIATIONS

Any shift in the dynamics between demand-driven and supply-constrained markets, or even the exacerbation of regional differences that affects import dependency, will alter the motivations of partners in trade negotiations. While providing an overview of some of the principal shifts in the conditions of world food markets and subsequent trade orientation over the past 50 years in general, and the last decade in particular, further examination of the impact on trade of a shift towards increased energy production (or other shifts in demand) is warranted.

The basic question now is how this possible change in the basic market environment would affect the trade negotiations in the future and whether and how a shift from a Cochran-type market environment towards a Jevons-type market environment could and should be reflected in current and perspective trade negotiations. Specifically, should the agenda negotiated under the DDA be revisited with a view to addressing not only trade distortions that put a downward pressure on international prices but also to introducing *binding* disciplines that help reduce international price hikes and excessive price volatility? Questions also arise as to whether there is enough, appropriate policy space in the DDA to ensure that domestic food security measures (e.g. domestic food subsidy schemes that can trigger inelastic purchases on international food markets) are being implemented without causing or exacerbating price hikes on these markets.

THE “OLD NORMAL”: POLICIES IN A DEMAND-CONSTRAINED MARKET ENVIRONMENT

The policy environment during the negotiations and the implementation of the URAA was generally characterized by (a) high and production-coupled domestic support; (b) high and often prohibitively high border protection; and (c) export subsidies necessary to dispose of domestic surpluses onto international markets. Import protection and export subsidies exerted downward pressure on international prices and made them more volatile. Low and volatile prices, in turn, provided disincentives to farmers in developing countries, resulting in lower domestic food production; in tandem, they provided incentives for consumers to shift consumption patterns towards less expensive, subsidized imported foods.

These policies generally helped net food-importing countries with limited domestic supply capacity, low foreign exchange availability and large urban populations (among them most countries in the Near East and North African region); however, they undermined the capacity of many countries with untapped food production potential – notably in sub-Saharan Africa – to feed their own populations and, over the long run, stifled domestic productivity growth.

BOX 1:

Policy options to reduce the adverse impacts of biofuels on food security

1. Biofuel support illustrates the need to include consumer protection in the DDA negotiations

The emergence of biofuels reflects a multitude of different factors, not least higher fossil fuel prices, rising import bills, and a strong political will to become less exposed to the vagaries of international oil markets and less dependent on fossil fuels imports from geopolitically sensitive regions. Many countries have responded to these challenges by supporting the production of biofuel feedstocks or by mandating biofuel use; some have also invested in the infrastructure to produce biofuels and in R&D to make biofuels economically viable and to bring them to the consumer.

The effect of these policies on food consumers is fundamentally different from the traditional production-coupled subsidies of the past. These traditional subsidies lifted domestic producer prices, spurred production, and created supplies in excess of domestic demand with the need to dispose of surpluses onto world markets. This excess supply caused downward pressure on world prices, compromised the interests of exporting countries, and ultimately shaped much of the policy agenda of the Uruguay Round Agreement on Agriculture (URAA) and early DDA negotiations. By contrast, the subsidies and policies to promote biofuels are subsidizing feedstock consumption in the energy markets, i.e. a large non-agricultural market that can siphon off commodity supplies from agriculture without depressing agricultural prices. Instead of distorting producer interests on world markets, these subsidies buttress world prices and open new market opportunities. These effects also explain why the pressure to circumscribe these subsidies in the DDA has so far been small.

While the impacts on crop producers were overall positive, the effects of these policies leave food consumers exposed to higher food prices and higher food price volatility. This gives rise to the question of whether policy options exist to minimize unintended and undesired impacts on producers and consumers, from international commodity markets all the way to smallholder farmers and local food markets. Two principle set of options are presented here. The first suggests options to establish greater flexibility in the use and production of biofuels, the second set deals with options to harness the potential of bioenergy for food production in food-insecure settings. The DDA could stimulate a discussion in both areas.

2. Options for greater flexibility

A number of countries have already developed and implemented policies to enhance the flexibility of their national biofuel markets. In the US, for instance, the Renewable Fuel Standard (RFS) requires blenders to submit “credits” to cover their annual biofuel supply obligations. These credits — Renewable Identification Numbers (RINs) — are just like commodities and can be traded as such. Currently, fuel blenders are limited to carrying forward a maximum of 20 percent of their obligations in reserve. Flexibility could be improved by allowing larger RIN stocks to be held and extending their tradability beyond one year. A similar system could make Brazil's mandates more flexible and allow refiners to reduce the 25 percent blending obligation as food prices rise while still meeting the objectives of the policy in the long run. Similarly, EU mandates could be made more flexible by adjusting volumes based on underlying feedstock price movements. In addition, annual mandates could be turned into obligations to be met over five or even ten years.

California is already exploring such safety valve options. The California Air Resources Board's (CARB) Low Carbon Fuel Standard (LCFS) includes a proposal for an extended or unlimited carry-over of credits. By selling an unlimited number of credits at a fixed price, it intends to lower biofuel use and to moderate feedstock prices in periods of tight obligation credit markets while maintaining incentives to meet the obligation in subsequent periods. Those credit receipts could then be used to expand the supply of E85 to invest in infrastructure, or to subsidize producers for the reduced volume of sales, thus transferring some risk from the underlying commodity markets to biofuel producers and ultimately to motor fuel consumers.

There is also room for greater flexibility at the “pump”. Promoting Flex Fuel Vehicle (FFV) technology would allow fuel blenders and consumers to adjust their choice between fossil and biofuels in response to changes in relative prices. However, there are also risks associated with this option. For one, such investments entrench the market for biofuels, and for another, they reinforce the dependency of food prices on volatile fossil fuel markets. There is additional room for flexibility in the biofuel supply structure. Having more plants that can produce both food and fuel – such as sugar and ethanol in Brazil – rather than just ethanol, would also bring more responsiveness to energy and food markets.

There is also space in harmonizing the basic principles of biofuel policies. The authors of this paper have demonstrated that uncoordinated biofuel policies in the US, the EU and Brazil can trigger large and largely unnecessary trade flows in ethanol. To avoid this “cross trade”, it may be sufficient to harmonize the assumed/assessed greenhouse gas (GHG) emission scores, which can vary considerably between countries for the same feedstock. While the main problem of cross trade is an inefficient use of resources, a side effect of these uncoordinated policies is that they reduce the ability of local markets to respond to feedstock prices. It could amount to added (reduced) demand for maize when world maize prices are already high (low) and cause thus more price volatility than in a more coordinated system.

It may also be useful to examine policy options that introduce greater flexibility in other resource markets. Water trading – i.e. the process of buying and selling water rights – may be one such option. Drought-prone areas of the US (California’s agriculture-to-urban water transfer scheme), Chile, Australia and the Canary Islands already have water-trading schemes. The basic case for such schemes rests on their potential to reallocate water from less to more economically productive activities, within a set of prior appropriations. Applied to biofuel markets on the national level, this would ensure that prior allocation is given to food markets rather than to energy.

An extension of the water-trading scheme would be to put the burden of reducing the impacts on food consumers on biofuel users. A fee on biofuel production or on the registration of obligation credits such as RINs could be used to purchase call options on key food commodities. The call options could be exercised by low-income food deficit countries (LIFDCs) in times of price hikes. The World Food Programme or national development agencies could help implement such schemes, ensuring purchasing power for food in these countries when feedstock prices – e.g. for maize – rise. In effect, this policy would cause fuel consumers to pay slightly more for their fuels at home to provide greater price stability for poor food consumers in countries abroad.

3. Improving energy access for food security, jobs and rural development

In addition to creating more flexible feedstock markets, there are options to promote food security by harnessing the power of biofuels for energy security at the local level. In many developing countries, the lack of access to affordable and continuous energy supply is the single most important factor limiting agricultural productivity, sustainable food security, and ultimately economic development. Supporting the use of bioenergy in a way that enhances food production could help improve food security.

In addition to having potential for local food production, biofuels can be a vehicle to attract investment in agriculture, create jobs in rural areas, and improve energy access outside a local environment. Targeted investment in the sector would increase crop production by smallholders, boosting yields levels, which in turn would ensure that both food and energy market demands are met. The DDA process could help analyse the exact impact of these options and identify practical policy options to (a) promote biofuels for smallholders’ food security; and (b) protect the interests of food consumers in developing countries in general and LIFDCs in particular.

The URAA aimed to address these distortions by proposing and implementing a three-pillar programme that introduced stricter disciplines on (a) domestic support; (b) import protection; and (c) export competition. It also tried to address, albeit much less prominently and much less effectively, the possible negative impact of rising prices for food consumers. The URAA also provided options to support farmers in developing countries whose livelihoods were undermined for decades by the trade policy measures of developed countries. Under the URAA's so-called Marrakesh Decision, considerable policy space was accorded to ("low income/resource poor") farmers in developing countries, particularly in the area of compensatory finance, food aid, stockholding, and support to investments in agricultural productivity (Art 6.2, AoA). More generally, almost all the disciplines of the URAA aimed at limiting, mitigating or coping with the impact of depressed international prices. With the exception of the weak disciplines of Art 12 AoA (and GATT 11.1), virtually no URAA measure tried to discipline trade measures that could induce price increases on international markets, such as export restrictions, export taxes or import subsidies.

The negotiations of the DDA started in the same market environment that had determined the architecture and the negotiating strategies of the URAA. In broad terms, the DDA negotiations sought to continue, deepen and broaden the URAA efforts to circumscribe domestic support, export competition and import protection. The negotiations aimed to strengthen the sometimes non-binding nature of URAA disciplines ("squeeze remaining water out of the tariffs"), further reduce/eliminate export subsidies, and reduce farm support. The negotiating groups that represented a large number of developing countries focused their interests on extending the privileges granted to developed countries in the URAA, thus reducing the real or perceived asymmetries in the existing URAA disciplines. The draft modalities reflect these efforts in various areas, notably in an evolution of an increasingly complicated set of proposals to reduce import protection, known as the "Banded approach",⁴ the "Blended approach"⁵ or the "Tiered Approach"⁶ with additional exceptions for "Special Products".⁷ It also resulted in proposals to grant them access to special protection options such as the Special Safeguard Mechanism (SSM), a flexible tariff scheme that allows developing countries to raise tariffs temporarily to deal with import surges or abrupt price slumps. Measures to ensure food security were also strengthened through less distortive food aid provisions (Art 10.4) with proposals to ensure that food aid remained needs-driven and that it was fully in grant form, not tied to commercial exports, and linked to development objectives. Finally, the DDA modalities included the introduction of tighter export credit provisions with strengthened rules on repayment periods, commodity space (basic foodstuffs) and interest rates (self-financing).

Although these proposals added considerable complexity to URAA's existing trade policy framework, they did not change the fundamental policy orientation focusing on the problem of low international prices and structural surpluses. Essentially the URAA and DDA trade disciplines focused on protecting

producers, not consumers. A similar argument could be made when examining subsidies for biofuel production. These subsidies affect agricultural markets in a different manner than the traditional subsidies given to agricultural producers. Unlike subsidies for food production, biofuel subsidies do not result in lower international prices or in surpluses that need to be disposed of on international markets. Instead, excess production is siphoned off by the energy market and, rather than depressing international prices, these subsidies actually support them.

The lack of protection provided to consumers became increasingly evident when the overall market environment started to change in the mid-2000s. In 2007–08, crop failures in the Ukraine and Australia in conjunction with mandated demand for growing amounts of biofuel feedstock triggered the first in a series of price hikes and revealed that the international market environment had shifted from one of low international prices, high food reserves, and large structural surpluses to one of high and volatile prices, dwindling food reserves, and structural deficits.

Notwithstanding these changes in the market environment, the negotiations continued to focus on disciplines that help avert low prices and protect producers. They were only effectively halted in 2008 without having reached a consensus on such trade disciplines; in fact, these disciplines had already lost some of their importance due to the shift in the overall market environment.

THE "NEW NORMAL": TRADE NEGOTIATIONS AND FOOD SECURITY

The shift from a demand-constrained market environment towards a supply-constrained one has also shifted the emphasis in the food security debate. While the low price environment focused on the need to ensure sustainable food production, the high price environment brought aspects of food access and affordability to the fore (Figure 7). As food expenditure accounts for high shares of total expenditures for the poor (sometimes in excess of 70 percent), there were growing concerns that high food prices would now become the driving force of hunger and malnutrition. The spikes in undernourishment reported in 2008 and 2010 corroborated these initial concerns, even if the impacts were smaller than initially feared.

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- 4 | **Products categorized by the height of the starting tariff.** Higher bands = steeper cuts. In the March 2003 draft modalities, the formulas in each band use the Uruguay Round (UR) approach (average cuts subject to minimums).
 - 5 | Used in the Cancún draft frameworks, the approach "blends" three formulas. The Uruguay Round approach applies to one category, the Swiss formula to another, and a third is duty-free.
 - 6 | **Products categorized by the height of the starting tariff.** Higher tiers (or bands) = steeper cuts. In the August 2004 agreed framework, this is still to be negotiated.
 - 7 | Products for which developing countries have sought extra market access flexibility for food and livelihood security and rural development.

In the area of trade negotiations, the same shift in policies has not yet taken place. By and large, the DDA negotiations still focus on protecting producers. Measures to protect consumers have not received the attention that the shift to the new market environment may warrant. If such a shift in the policy debate came to pass, this could instil a new sense of purpose into the negotiation process, help resume negotiations, and even help conclude the DDA. Preparing such discussions should be supported by a shift in the research agenda for trade. A **twin-track approach** could be pursued to (a) ensure that trade policy measures help protect consumers from the negative impacts of higher and more volatile prices; and (b) at the same time, enable small producers in developing countries to harness the benefits of higher prices. With respect to consumer protection, the research agenda would try to identify practical proposals to limit the options for, and mitigate the impact of, supply controls, export restrictions and taxes. On the producer side, the new research agenda should explore practical proposals that ensure that small-scale producers have access to better infrastructure and that they can improve access to inputs, protect their resource base, and manage their production risks more effectively.

Ensuring consumer protection and assuring importing countries of open food markets without export restrictions or import subsidies would also address some of the environmental problems that may arise from a potential shift in the overall market environment. Many developing countries, including large markets such as China and India, have been pursuing food self-sufficiency and import substitution policies as world markets were deemed unreliable, particularly in episodes of high prices where traditional exporters limited or shut down their supplies. While these import substitution policies were often instituted after episodes of high prices and international supply constraints, they sometimes remained in place for decades. A case in point is China's "Governors Grain Responsibility Policy". These policies not only result in high economic costs, they also lead to high environmental costs and further resource scarcity. In China, for instance, the need

to ensure grain self-sufficiency by province led to shifts in rice cultivation to Northern provinces and aggravated existing water scarcity problems in this region. Assuring importing countries of functioning world markets, e.g. through strict disciplines on export restrictions, would provide them with an important signal to rely more on international supplies. It would also help ensure that global agricultural production is allocated in line with the comparative advantage, i.e. making sure that the additional agricultural output is produced where natural resource constraints are least binding.

CONCLUSION

Several agricultural commodity prices surged in the summer of 2012, the third run-up in the last five years, and while agricultural commodity prices have moderated, they remain elevated compared to historical trends. It is unclear whether the recent price spikes are a result of transient factors, which would cause the long-run trend of declining prices to re-establish itself, or whether there has been a fundamental shift from a demand-constrained market to a supply-constrained one. A persistent shift to a supply-constrained market, perhaps one where energy markets provide a large and elastic source of demand for agricultural output, has important implications for the policy process. Trade negotiations that emphasize market access for exporters in the context of low prices may need to be supplemented by discussions on how to address the concerns of import-dependent developing countries and those affected by export constraints, should high and volatile prices persist. The implications of a shift in the dynamics of supply and demand in agricultural markets also extend to other policy arenas, including research and development policy as well as resource management policies and beyond. Under such conditions, a twin-track approach to further trade negotiations, one that ensures both producer and consumer protection, should be examined.

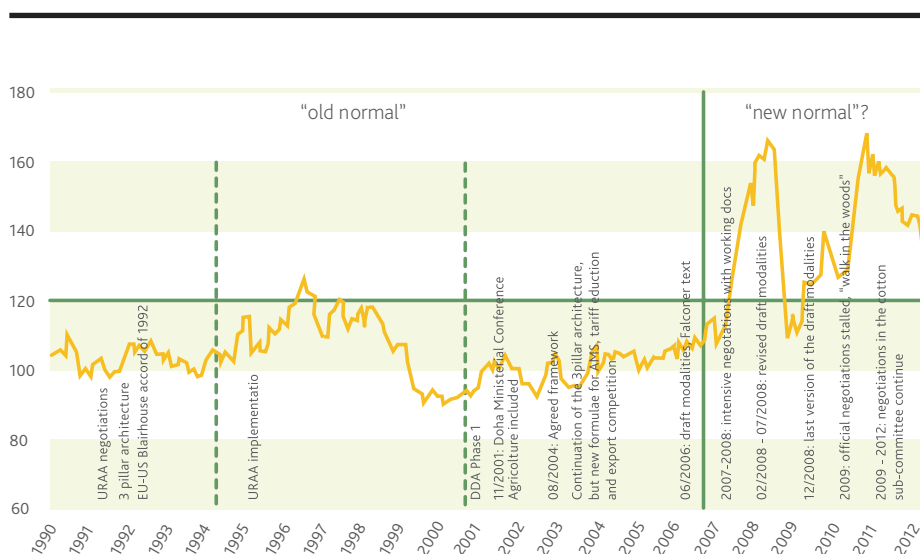


FIGURE 1:

WTO negotiation process and progress and the FAO Food Price Index (real 2002-2004=100)

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DO YESTERDAY'S DISCIPLINES FIT TODAY'S FARM TRADE?

Jean-Christophe Bureau and Sébastien Jean

INTRODUCTION

In 2001, World Trade Organization (WTO) Members agreed to start negotiations that would lead to reductions in domestic support for agricultural commodities, improvements in market access, and the phasing out of export subsidies.¹ They agreed that special and differential treatment (SDT) for developing countries would be an integral part of the negotiations. No agreement has yet been reached. Meanwhile, considerable changes have taken place in the world trading system. Some developing countries have become economic superpowers and political heavyweights, while most developed countries have been facing an economic crisis with low rates of growth. The conclusion of a number of Regional Trade Agreements (RTAs) shows that there is widespread enthusiasm for trade liberalization, but regionalism is preferred to multilateralism, or considered more effective in gaining access to growing markets. Radical changes have also taken place in agricultural and food markets under pressure from growing demand and new uses for agricultural products.

We explore how trade and trade policies have evolved over the last decade and consider the implications for the Doha negotiations. We examine the recent changes in agricultural trade patterns, the nature of trade, and the linkages with non-food markets. We review the main changes in tariffs, including those under RTAs, and in other trade-restrictive measures. Recent changes in domestic support tend to reverse the trend towards more decoupled forms of support initiated during the Uruguay Round. Despite the apparent attractiveness of bilateral agreements, multilateralism remains the best way to avoid a fragmentation of world trade, whereby some countries are left behind and all incur undue costs. Multilateralism is also the shortest way toward balanced trade liberalization and a rule-based system to deal with trade disputes. We point out several areas of importance for a successful multilateral negotiation.

THE NEW PICTURE OF AGRICULTURAL TRADE

Since the Doha Round was launched in November 2001, international trade in agricultural and food products has undergone important changes, which are likely to significantly alter the background of the negotiations. This section briefly reviews the most relevant new trends.

THE INCREASING IMPORTANCE OF DEVELOPING COUNTRIES IN AGRICULTURAL TRADE

From 26% in 2000, the share of developing countries (non-LDC, based on economic criteria) in world imports of agricultural products has reached 41%, and it is close to 60% for cereals (Figure 1).² This share increased from 34% to 45% in world exports. Even for meat and fish products, the share of developing countries in world imports went up from 16% in 2000 to 34% in 2011.

Developing countries' markets cannot be considered peripheral anymore. As for manufactured products, they are now central: they represent a significant part of world trade, and an overwhelming share of its growth.

A NEW CHARACTERISTIC OF WORLD MARKETS: HIGHER PRICES

In the evolution of trade in agricultural and food products, volumes and prices have not followed the same patterns of change. For decades, agricultural prices in real terms went down because of rapid technological changes, government intervention that boosted supply, and periods of "trade wars", when large entities such as the European Union (EU) and the United States (US) competed with export subsidies. While it is too early to infer a reversal in historical trends, this period ended in 2006. Since 2007, agricultural prices have been rising, especially for cereals and oilseeds.

A growing population; change in diets in emerging countries; increasing use of agricultural commodities in transport fuel; global warming; and frequent water shortages indicate that this change in world market fundamentals will endure. However, there are uncertainties regarding the land area that can be sustainably converted into farmland; the unleashing of production potential in regions such as Ukraine and Russia; and the impact of global warming, which will reduce

1 This work benefited from support by ICTSD and is partly based on research conducted under the FOODSECURE research project, 7th Framework Programme, European Commission, DG RTD. Only the authors are responsible for any omissions or deficiencies, and for the content of the paper.

2 Based on the WTO definition of developing countries, this share was almost 50% in 2010 (Table 2).

production in tropical areas but could increase it in other regions. Earlier research concluded that the initial stages of climate change would bring net benefits to global agriculture, but this is now being challenged (Cline 2007; Lobell et al. 2008; Ackerman and Stanton 2013). The long-term impact on world prices of improved yields and double cropping is also uncertain.

Although higher world prices since 2007 are likely to boost investments in agriculture, and called for by the World Bank (2008), they will hit consumers in the poorest countries. They will also lead to structural changes in land use since the livestock sector tends to become less profitable than arable crops. In some regions, cereals (Western Europe) and oilseeds (South America) are expanding in traditional livestock production areas. Land use is changing globally with the expansion of arable land, particularly in Africa, South America, and Indonesia, with forests and savannahs being converted to farmland. This will have considerable effects on the environment through greenhouse gas emissions and biodiversity erosion (Lambin and Meyfroidt 2011).

On the policy side, higher prices have made some of the policy instruments inactive, in particular the EU intervention system and the US and Canadian countercyclical instruments. Even though policy rules remain unchanged, it tends to reduce the support to agriculture monitored by international organisations. Higher prices also give third-country exporters less incentive to pressure their governments to challenge other countries' policies, hence lowering pressure for a Doha agreement.

A related issue is whether we are entering a phase of increased world price volatility. Current data are inconclusive about a long-term rise, and it seems that the volatility of agricultural prices was less marked during the past 20 years than previously (Gilbert and Morgan 2010). The recent surge in food prices raises the question whether an era of price fluctuations and periodic food scarcity lies ahead. Wright (2011), writing on the 2007–08 crisis, emphasised that it did not seem to reflect a chronic inability of supply to respond to demand; but a retrospective look at market forecasts shows that the magnitude of this surge remained unanticipated until the mid-2000s.

NEW LINKAGES WITH NON-FOOD MARKETS

Biofuels have recently had a considerable effect on agricultural markets. Table 1 shows the increase in the use of agricultural feedstock by the energy sector between 2007 and 2011. The use of corn and cane in the ethanol market is close to 20% of world production, and the figures are 10% for soybean and 30% for rapeseed. This has had a large impact on food markets, with spillovers on other cereals, starch and glucose products, and oilseeds. Until recently, biofuel demand was driven by public policies such as subsidies, tax exemptions, and compulsory blending mandates. The competition with food, together with growing questions on the environmental balance of biofuels, have led to several countries lowering their ambitions (China, for example; the EU is considering reducing its first-generation biofuel targets). Large blending mandates for ethanol persist in the US, though.

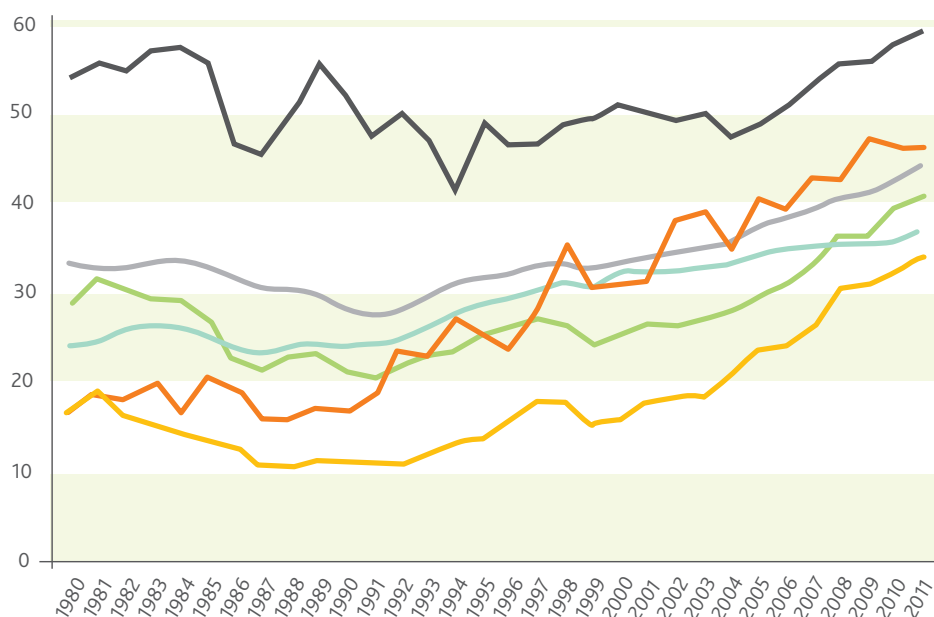


FIGURE 1:

The share of non-LDC developing countries in world trade of food and agricultural products

LEGEND:

- cereal imports
- cereal exports
- ag-food exports
- ag-food imports
- meat exports
- meat imports

Source: Chelem database (CEPII).

Note: Following Chelem classification, the definition of developing countries is based on economic criteria, not on WTO classification. In addition to LDCs, it excludes the following countries, considered developed: EU-15 countries, Australia, Canada, Hong Kong, Iceland, Israel, Japan, New Zealand, Norway, South Korea, Singapore, Switzerland, Taiwan, and the US. The definition of agricultural and food products in Chelem does not exactly match the WTO definition.

Biofuels change the picture on future prices. The quantities of feedstock absorbed by the non-food market are potentially almost unlimited. They have consistently exceeded expectations over the past decade (Wright 2011). There will be economic limitations to the development of biofuels. As explained by Schmidhuber (2007), there are thresholds beyond which biofuels end up squeezing themselves out of the market because of higher costs of production induced by the demand for feedstock. But public incentives to use biofuels can be such that extra demand from the energy markets may exceed supply. This must be taken into consideration since the overall supply and demand balance for agricultural products is dependent on projections regarding non-food use.

A consequence of the interaction between food and non-food markets is the long-term diminution of worldwide stocks. Biofuel policies topped other drivers, including the end of the intervention stocks in the EU, the change in the Chinese policy of storing grains (or declaring grain stocks, since the level and quality of these stocks have long been controversial), and reductions of some strategic stocks after the Cold War period.

The impact of the non-food outlet for cereals on world prices is non-linear but significant (Wright 2011). Despite differences in results, most authors agree that biofuel policies have a significant impact on world prices for grains and oilseeds, which is transmitted to most crop products through demand and supply substitutions (Bureau and Valin 2011). The biofuel

outlet, by reducing the level of stocks, also contributes to price volatility. This is amplified because biofuel policies tend towards mandates rather than subsidies, which rigidifies the demand for feedstock. The reliance of the petroleum industry on biofuels has linked the prices of fossil fuel and some farm products. The correlation is highly visible between petroleum and oilseed prices. It is less so, but significant, between petroleum, and corn, and sugar prices. The emergence of biofuels may introduce some of the volatility of the oil market in agricultural markets.

Biofuel policies are now a major policy instrument to support (crop) farmers' incomes. In that sense, they tend to replace old policies that the EU and the US were using to support producer prices in the 1980s. Bureau and Valin (2011) calculated that biofuel policies in the EU and the US had similar welfare effects for producers who received several billions in production or export subsidies. Biofuel policies nevertheless have very different consequences on the world market. Production and export subsidies led to lower world prices. However, the opposite happens when the non-food market, rather than foreign markets, is used as an outlet. Biofuel policies also benefit all producers, not just domestic ones. This (and legal as well as statistical issues) explains why biofuel policies are not subject to WTO discipline as other forms of domestic price support are. With the generalization of blending mandates, the cost of farm support is paid not only by food consumers, but also by gasoline and diesel consumers, while intervention, export, and production subsidies were paid mostly by taxpayers.

TABLE 1:

Sources of growth in crop production (percent) (Source: Alexandratos and Bruinsma 2012)

Source: Computed for the Foodsecure project by Hugo Valin (IIASA, personal communication) using data from USDA, European Biodiesel Board, USDA and FAOstat. The figures are based on the main producers of ethanol and biodiesel, i.e. on the US, the EU, Brazil and China for ethanol; the US, the EU, Brazil, Argentina, Indonesia, Malaysia, Thailand, South Korea, Philippines, Singapore and Canada for biodiesel.

Product	World production 2007 (1 000 t)	Use in biofuel 2007 (1 000 t)	Share in biofuels 2007	World production 2009 (1 000 t)	Use in biofuel 2009 (1 000 t)	Share in biofuels 2009	World production 2011 (1 000 t)	Use in biofuel 2011 (1 000 t)	Share in biofuels 2011
Ethanol use									
Maize	789,481	61,711	7.8%	817,111	101,924	12.5%	883,460	135,309	15.3%
Wheat	612,607	2,572	0.4%	681,916	3,752	0.6%	704,080	6,286	0.9%
Sugar cane	1,617,176	269,645	16.7%	1,682,577	294,316	17.5%	1,794,359	259,399	14.5%
Sugar beet	246,535	5,140	2.1%	229,490	8,930	3.9%	271,645	10,330	3.8%
Biodiesel use									
Soya oil	37,276	2,462	6.6%	36,125	4,080	11.3%	41,642	6,563	15.8%
Rapeseed oil	17,914	4,520	25.2%	21,223	6,113	28.8%	22,329	6,310	28.3%
Palm oil	38,939	607	1.6%	41,340	1,689	4.1%	48,551	2,915	6.0%

STRUCTURAL AND POLICY DETERMINANTS

Whether the new world trade scenario in agriculture is caused by trade and agricultural policies is debatable. Some background drivers have considerably affected agricultural trade. In addition to demographic growth and the development of biofuels, the progress of large emerging countries boosted the purchasing power of a large population, changing its diet and leading to a surge in demand for animal products. The apparent (but debated) slowdown in yields progression could also have contributed to a gap between change in supply and change in demand (Chavas 2011). In addition, the depletion of fish stocks has shifted demand for proteins towards agriculture.

The disciplines introduced by the Uruguay Round, prompting large entities to shift to more production-neutral payments to farmers and limit their export subsidies, have also contributed to end the decline in prices. International trade in agriculture has undoubtedly been affected by Uruguay Round disciplines and by the development of RTAs, as well as non-reciprocal preferences provided to poor countries. In the next sections, we review recent developments on market access, price support, and export competition.

MARKET ACCESS

TARIFFS

The 1994 Marrakesh Agreement did not substantially cut the level of protection granted by bound tariffs. The committed average cut by 36% in bound tariffs had limited impact because of well-documented effects often referred to as “dirty tariffication” (the overestimation of the initial protection when binding tariffs) or “reduction commitment dilution” (reaching an average 36% reduction by applying large cuts on products of little importance, or low initial tariffs, Bureau et al. 2000).³ Since then, however, many countries have unilaterally reduced their most-favoured nation (MFN) applied tariffs, even in agriculture. Although they mainly concern manufacturing, the increasing importance of global and regional supply chains is probably the main explanation for this trend (Baldwin 2011). In addition, the widespread development of RTAs—together with non-reciprocal preferences—means that applied tariff protection declined even further than suggested by applied MFN tariffs.

The 2008 financial turmoil and the ensuing economic crisis raised fears of a protectionist backlash. There has been some evidence of new trade impediments, as documented by Global Trade Alert (Evenett 2012). However, the surge in tariff protection seems to have been rather limited if we consider WTO members as a whole. At the same time, large countries such as China, for example, lowered their applied tariffs on a large set of commodities, including some agricultural products such as soybean and pork, to meet domestic demand and control inflation.

Some of the tariff increases that have been widely publicized, particularly in South America, have to be seen in the light of the large currency fluctuations that shook the area and disrupted trade flows between neighbouring countries. Generally, statistically apparent protectionist measures through government intervention that affect trade have more to do with countercyclical policies than with outright protectionism (Evenett 2012). Most international agencies conclude that the rise in tariffs and duties has so far been limited in agriculture. WTO figures suggest that the rise in tariffs covers a fraction of imports, and that trade-impeding measures mostly take the form of non-tariff measures (WTO 2012). Kee et al. (2013) show that overall protection declined between 2008 and 2009. There were slight increases in agriculture, mainly as a result of ending tariff suspensions or cuts applied during the 2007–08 food price spike.

A gap between applied and bound protection

Since the end of the implementation period of the Marrakesh Agreement (end of 2000 for developed countries, end of 2004 for developing countries), bound tariffs did not change substantially, except for new member countries. An examination of applied tariffs suggests that, in the medium term, tariff protection tends to go down. In contrast with bound tariffs, applied protection declined steadily since the negotiations began (Table 2). Worldwide, applied MFN duties were cut from 24.6% in 2001 to 18.7% in 2010, and applied preferential duties from 15.8% to 13.8%. The cut in MFN applied duties was especially steep for countries classified as developing in the WTO, from 31.1% to 23.2%. This is hardly more than a third of their average bound duties (61.3%), and preferential applied tariffs are much lower (19.8% in 2010). This means that any realistic cut in developing countries' bound tariffs is unlikely to significantly alter the applied tariff protection. With an average MFN applied rate for agricultural products worth less than a third of its bound rate (39.4% vs. 136.1%), India epitomizes this concern, but the problem is similar for Mercosur, where it also concerns non-agricultural products.

Another consequence is that increased protectionism is technically possible without infringing current WTO rules: MFN applied duties can be raised to the level of bound duties, and contingent protection can be used in a variety of ways. Investigating the possibility of WTO Members raising their applied tariffs up to the bound rate, or up to the highest level of applied tariffs over the past 10 years, Bouët and Laborde (2010) found that while the average applied tariff worldwide in agriculture is around 14%, if all WTO Members raised their applied tariff up to the maximum (bound tariffs, except where an RTA applies), the average protection would double to 28%.

3

For those countries that have joined the WTO since 1994, though, the accession procedure resulted in large cuts in bound tariffs.

Protection as measured through price gaps

A complementary approach to protection in the domestic market measures gaps between world and domestic prices. This takes into account important developments beyond the border, such as the dismantling of administered prices in the EU, Korea, Japan, Switzerland, and Norway. Information on changes in nominal protection coefficients (that is, the ratio of domestic to world prices) shows that in most developed countries the decrease in actual agricultural protection has been steady since 1995, particularly in countries where it was highest—Korea, Switzerland, Japan, Norway and, to a lesser extent, the EU (Figure 2).

In contrast, actual nominal protection is on the rise in the emerging countries considered here. In Brazil, Mexico, Russia, and Ukraine, the nominal protection coefficient is now barely higher than one; its increase corresponds to the end of agriculture taxation, and primarily reflects reduced obstacles to exports, rather than a rush to protection. The case of China and Russia deserves more investigation since the increase in the nominal protection coefficient reported in Organisation for Economic Co-operation and Development (OECD) data is sudden and recent. As we document below, this trend is at least partly the result of rising domestic support through producer price intervention.

NON-TARIFF MEASURES

Rising protectionism is often cloaked as anti-dumping or non-tariff measures, which account for the bulk of what Baldwin and Evenett (2009) call “murky protectionism.” The Global Trade Alert database, in June 2012, reported 1,340 non-tariff measures taken since November 2008 that “almost certainly worsened the treatment of some foreign commercial interest”. Only 553 measures with the opposite effect were identified (Evenett 2012). Agricultural products are most hit by discriminatory measures.

WTO notes a marked increase in technical barriers to trade (TBT) notifications, especially from emerging countries, and that agricultural products remain disproportionately affected by such measures (WTO 2012). Various sources surveyed in the 2012 WTO World Trade Report on these issues (from disputes to business surveys) are rather ambiguous regarding a surge in non-tariff protectionism over the recent period.⁴ More detailed data monitored by the WTO on the basis of the Group of Twenty (G-20) declarations leads to

4 Bacchetta and Beverelli (2012), using the same data, conclude that there has been an increase in SPS and TBT barriers, but in its official publication, WTO avoids reporting such measures and assessing whether they are justified on public policy grounds.

TABLE 2:

Preferential, applied and bound tariff duties, and share in world imports, for agricultural products, by group of countries

Note: Bound duties have been computed based on 2004 data about final bound duties, i.e. after full implementation of the Uruguay Round's Agreement on Agriculture commitments. Following the rules adopted in draft modalities, a base rate, equal to twice the MFN rate, is taken as the bound for unbound products. For most countries, they have remained unchanged since then (China is an exception, though). Ad-valorem equivalent calculations and aggregation follow MacMap-HS6 methodology (see e.g. Guimbard et al., 2012). (*) China was making widespread use of tariff exemptions and suspensions in 2001, which are taken into account here in computing the applied preferential duty rate, but not the MFN rate: since China was not member of the WTO at the time, we consider the statutory rate to be the MFN. Source: MAcMap-HS6 (CEPII and ITC) and BACI (CEPII).

	Applied preferential		MFN		Bound	Share of world imports	
	2001	2010	2001	2010		2001	2010
Developed	12.5	10.1	21.9	16.0	23.8	58.8	47.9
Developing, of which	23.4	19.8	31.1	23.2	61.3	39.9	49.9
China	24.6(*)	19.1	56.1	19.8	25.3	3.2	8.2
India	58.3	38.8	58.4	39.4	136.1	1.2	1.6
Maghreb	32.5	23.2	34.3	25.6	77.4	1.8	2.0
Mercosur	11.1	9.0	12.0	10.4	37.3	1.7	1.6
LDCs	19.4	13.8	19.9	14.5	131.5	1.3	2.1
World	15.8	13.8	24.6	18.7	37.2	100.0	100.0

the conclusion that “accumulation of trade restrictions has become a major concern.” However, the whole set of measures implemented in 2011 covered only 1% of trade, and 7% of agriculture, with meat accounting for a large share. It is difficult to conclude with certainty that non-tariff protection has increased dramatically in agriculture even though there are some indicators that non-tariff barriers have been on the rise recently.

The much discussed thesis of a surge in “green protectionism” in agricultural products, as claimed by Erixon (2011), is unconvincing. Many of the “green” restrictions, such as the long-standing idea of border carbon taxes in the EU, have been discussed but seldom imposed. Considering environmental or sanitary measures demanded mainly by consumer organizations as “trade barriers” is questionable. Restrictions imposed by some countries on genetically modified goods are a typical example of non-intended protectionist measures: most farmers organizations (those that the “trade” measure is supposed to protect) would support a relaxation of genetically modified organism (GMO) rules in the EU, while the ones supporting the measures are consumers who have to put up with expensive products and import restrictions. As Rodrik (2011) argues, one should not overlook the main motivations of measures decided by democratic parliaments. Focusing only on their indirect trade impact may lead to some legitimate aspects of these measures being ignored, and does little good to the perception of WTO. When looking at the dissemination of pathogens and invasive species, and the enormous economic cost of alien invasions (not all of them are linked to trade, tourism plays an increasing role), one might even conclude that there are not enough “non-tariff barriers” in agricultural trade (see EEA 2013).

More than unilateral initiatives, what is more of a danger in the long run is the proliferation of preferential agreements, which tend to generate non-tariff barriers through the definition of standards and trade-facilitation procedures between the signing parties, paving the way for a fragmented world in terms of technical requirements on imports.

DEVELOPMENT IN PREFERENTIAL TRADE REGIMES

The proliferation of preferential trade regimes has become a defining feature of international trade. From 123 RTAs notified to WTO in 1995, it has gone up to 546 (January 2013, counting goods and services separately), of which 354 are in force. New agreements have proliferated since the mid-2000s, with the Asia-Pacific region taking centre stage in recent years (WTO 2011). While RTAs tended to be regional until the early 2000s, this is not the case anymore, and agreements between partners on different continents have become customary. RTAs are often perceived as an alternative to the poor progress in the multilateral arena. They tend to proliferate because countries fear being excluded from the network of agreements signed by other countries (which explains the recent shift of EU policy). RTAs are also driven by economic, political, and security considerations. For large countries, RTAs are a way to overcome the lack of consensus on some non-market issues in WTO, or promote deeper integration of their economies. In the case of the EU and the US, RTAs are used to promote common rules on investment, competition, trade in services, environment, and, sometimes, labour standards. In agriculture, the focus is on tariff liberalisation and on several beyond-the-border areas, such as patents, sanitary and phytosanitary measures, animal welfare standards, and mutual recognition of appellations of origins, leading to either “WTO-plus” or “WTO-extra”

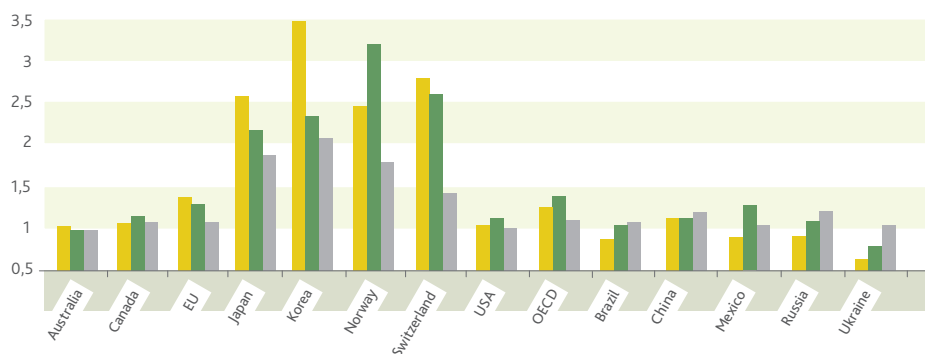


FIGURE 2:

Nominal protection coefficient for agricultural commodities in selected developed and emerging countries (1995, 2002 and 2011)

LEGEND:

- 1995
- 2002
- 2011

Source: Compiled using OECD data. 2010 figures for China, Russia, Ukraine and Brazil. The nominal protection coefficient is defined as the ratio of producer price to the world price at the border (adjusted for transportation costs). The figure for the OECD is a Fisher index of the prices of the different members. The coefficient is established on the list of agricultural products monitored by the OECD, see the PSE documentation on www.oecd.org/agriculture.

provisions.⁵ RTAs are increasingly being used as a platform to promote exports to neighbouring countries. The emergence of such hub-and-spoke strategies reflects the development of regional supply chains, now a major driver of economic decisions (Baldwin 2012).

The share of world trade between RTA partners has been growing steadily, and at a faster pace for agricultural and food products than for manufactured products (Figure 3).

Those developed countries that protect and support their farm sector—the US, the EU, Japan, Norway, Switzerland, and so on—often exclude some agricultural sectors they consider sensitive from tariff cuts in RTAs. This is the case with sugar and dairy products in agreements signed by the US. EU RTAs include preferential tariff rate quotas for sensitive agricultural products, especially when the trade partner could potentially flood the EU market (with fruit, meat, sugar, citrus, and so on), and Japan’s Free Trade Agreements (FTAs) frequently exclude many agricultural products. Even so, there are significant tariff concessions under RTAs. In Jean and Bureau (2012), we estimate, on the basis of a sample of 74 RTAs, that preferential margin exceeds 10 points in more than half of agricultural sector products (Table 3). The mean preferential margin doubles within eight years of its entry into force, from 4.3% during the first year to 8.8%. On average, over the agreements considered and other things being equal, RTAs increase agricultural and food exports between signatories by 32% to 48% when fully phased in. Trade impacts are larger, on average, for agreements between developing countries, and for agreements granting higher preferential margins, particularly when the partner’s initial market share is low.

Such impacts are sizeable enough to deeply influence trade patterns. But more significant changes may be coming—recent announcements include negotiations of “mega-regional” (between the EU and the US, or between the EU and Japan) and “minilateral” (like the Trans-Pacific Partnership, now likely to include Japan, and the Regional Comprehensive Economic Partnership, also known as ASEAN-plus-six) trade

agreements which, by their size, would radically change the situation.

With the increasing bargaining power of emerging countries, some large exporters of agricultural products now have more leverage to gain concessions. Mercosur countries, for example, have said that an agreement with the EU should include significant concessions.

There have also been significant changes in the non-reciprocal preferential regimes; particularly the Generalized System of Preferences (GSP) granted by developed countries. Countries that have signed an RTA have been removed from the list of GSP beneficiaries, and some others have been “graduated” or excluded from the preferences either because they were considered to have reached a level of development that no longer justified tariff concessions, or because they were competing aggressively with local producers (see changes in US and EU GSP regimes, Bilal et al. 2011). This increased focus of GSP regimes on “those countries most in need” signifies the new status of emerging countries. In some cases, pressure from WTO Members has led to reforms in non-reciprocal concessions to make them compatible with WTO rules. The impact on African countries of the end of the EU Cotonou preferential regime, which led to difficult negotiations for turning what was an EU concession into a set of (reciprocal) FTAs, is an illustration. These developments will have consequences for WTO negotiations, especially for those in the SDT which, in agricultural negotiations, can be considered as “the fourth pillar” of a possible agreement.

5 Horn et al. (2010) distinguish WTO-plus from WTO-extra provisions. The first corresponds to those provisions of PTAs that come under the current mandate of WTO, where the parties undertake bilateral commitments going beyond those they have accepted at the multilateral level; for example, a reduction in tariffs. The WTO-extra category comprises those PTA provisions that deal with issues outside the current WTO mandate, such as a commitment on labour standards. EU PTAs include many WTO-extra provisions, even if the latter are seldom legally enforceable, while US PTAs focus more on deepening WTO provisions, that is, a WTO-plus approach.

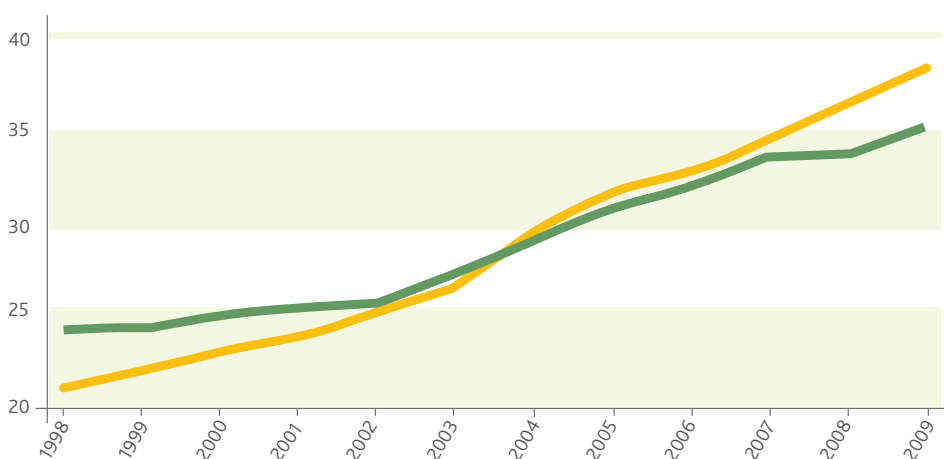


FIGURE 3: Figure 3. Share of trade between RTA signatories in global trade, by major sector (%), 1998–2009

LEGEND:
■ Agricultural product
■ Food products

Note: Agricultural products are identified using the WTO definition. Of these, goods from Chapters 15–24+ are classified as food products.

Source: Calculated by the authors from Comtrade’s BACI (CEPII) database, the WTO RTA database, and additional information on RTAs from various sources.

TABLE 3:

Mean base rate and preferential margin by HS chapter and by time elapsed since entry into force of the agreement (in percent)

Note: The figures concern goods defined as agricultural by the WTO; 74 bilateral agreements covered (see list in the Appendix). "Year 1" refers to the year following the entry into force of the agreement, "Year 5" to the fifth year after entry into force, "Full" to the full implementation of RTAs, once the phase-in period is over. "Base rate" refer to the duty rate used as a basis for the agreement, usually the MFN applied rate at the time of entry into force.

Source: Calculated by the authors from BACI (CEPII) database, Comtrade (UN), MacMap-HS6, and IDB data.

Chapter	Base rate	Preferential margin		
		Year 1	Year 5	Full
01- LIVE ANIMALS	9.4	5.3	6.0	6.5
02- MEAT & EDIBLE MEAT OFFAL	21.8	5.1	8.4	11.8
04- DAIRY PRODUCE; EGGS; HONEY	27.9	7.0	10.4	14.0
05- PROD. OF ANIMAL ORIGIN, NES	5.8	4.1	5.0	5.6
06- LIVE TREES & OTHER PLANTS	10.1	5.2	6.8	7.6
07- VEGETABLES	13.3	5.9	8.8	10.5
08- FRUITS	11.6	6.3	8.8	10.4
09- COFFEE, TEA, SPICES	10.0	4.9	7.1	8.4
10- CEREALS	17.1	5.6	7.7	10.1
11- PROD. OF THE MILLING INDUSTRY	17.1	4.4	8.4	11.6
12- OIL SEEDS & OLEAGINOUS FRUITS	7.0	4.0	5.2	5.9
13- LAC,GUMS, RESINS	5.9	3.5	5.0	5.7
14- VEGETABLE PLAITING MATERIALS	6.0	3.6	5.1	5.9
15- ANIMAL OR VEGETABLE FATS & OILS	10.8	3.7	6.4	8.9
16- PREPARATIONS OF MEAT & FISH	20.1	4.9	9.0	12.7
17- SUGARS & SUGAR CONFECTIONERY	18.3	4.9	7.7	10.9
18- COCOA & COCOA PREPARATIONS	11.2	4.9	7.4	9.8
19- PREP. OF CEREALS	13.6	4.8	8.5	11.4
20- PREP. OF VEGETABLES & FRUITS	15.0	6.1	10.0	12.7
21- MISCELLANEOUS EDIBLE PREP.	13.5	6.0	9.5	12.0
22- BEVERAGES, SPIRITS & VINEGAR	23.6	6.1	10.5	13.5
23- FOOD RESIDUES & WASTE	9.3	4.1	6.1	7.6
24- TOBACCO	23.4	9.5	13.6	16.8
NON-FOOD AG. PRODUCTS	5.9	3.2	4.5	5.4
All products	13.0	5.0	7.5	9.5

DOMESTIC SUPPORT

The perception that what matters in the Doha Round is market access, that is, tariffs, is widespread. Numerous works suggest that disciplines on domestic support would result in much lower gains than tariff cuts (World Bank 2003 is an example). We argue that the reality may be more complex, especially when recent developments in emerging countries are taken into account. The importance of domestic support may be understated, while the asymmetry between richer and poorer countries is no longer what it used to be.

TRENDS TOWARD MORE PRODUCTION-NEUTRAL FARM SUPPORT IN DEVELOPED COUNTRIES, AND TURNAROUNDS

After the 1994 Marrakesh Agreement, many developed countries reduced the most distorting forms of agricultural support, including price support and subsidies directly linked to the level of production. The recovery of world markets played an important role in reducing price differentials between world and domestic markets in developed countries (Figure 2), in particular in the US and Canada. Lesser reliance on guaranteed prices is another factor driving this trend, in particular in the EU, where systems to support prices were dismantled for all commodities except bread wheat and dairy (with considerably lower support prices), and in the US where decoupled payments replaced more distorting instruments in the 1996 Farm Bill (Butault et al. 2012). A series of WTO challenges made the most reluctant countries reform their distorting forms of domestic support. This sent a signal to other countries such as Switzerland, Korea, Japan, which reoriented their support towards environmental payments and other forms of production-neutral transfers to farmers.

Recent policy decisions denote significant changes, though. The latest US Farm Bills, in particular the one currently being discussed, can be seen as a turnaround in making domestic payments less trade distorting. Both versions of the future Farm Bill drafted by the Senate and the Agricultural Committee of the House of Representatives plan to cut decoupled payments and replace them with a series of shallow loss, countercyclical, and insurance payments. The likely result is increased isolation of US producers from adverse outcomes such as poor local harvests or a fall in world prices. Induced trade distortions should be significant (Bureau 2012).

The EU had largely played by the rules of the 1994 Uruguay Round Agreement regarding domestic support. After the cuts required by the 1994 agreement, it is entitled to provide €72 billion of production-distorting support (the one that corresponds to the Aggregate Measurement of Support, Butault et al. 2012), but it now provides farmers less than €10 billion. The rest has hardly been reduced but has been made unconditional to production.⁶

DEVELOPING COUNTRIES: DOMESTIC SUPPORT TO AGRICULTURE ALSO EMERGES

Unlike developed countries, several emerging countries have rapidly increased their subsidies to farmers since the conclusion of the Uruguay Round, and are now using instruments linked to production. The OECD reports spectacular increases in support to agriculture in China, Russia and Turkey, for example, as measured by the Producer Support Estimate (PSE). Figure 4 shows that while some developed countries support their farmers at a much higher level than emerging countries, the trend is opposite. Some emerging countries, including Russia and China, now support their farmers at levels that are similar to, or higher than, the OECD average. The link between domestic support and income level is not clear cut anymore.

Expressed in real terms (2005 purchasing power parity), the growth of support in emerging countries contrasts even more with the decline in developed economies (Table 4). The real support granted to farmers in China doubled between 2007 and 2010 (Butault et al. 2012). Real support also increased in Brazil, although the final level remains much lower. Many emerging countries are several years behind in notifying domestic support to the WTO,⁷ but unofficial calculations suggest that some countries (Turkey, for example, and maybe India, Brazil and Thailand as well) might be exceeding the limits of their WTO commitments (DTB Associates 2011).

In addition to the support received by each farmer individually (measured by the PSE), collective governmental support is also common. These transfers are compiled under the "General Services" item (research, food aid, education, infrastructure, and so on). The sum of support to individual farmers (PSE) and collective governmental support gives the Total Support Estimate (TSE). In Table 5, the TSE is converted into a common unit using the current exchange rate (euro, column 1), in real terms using PPP exchange rates (column 2), and as a percentage of GDP (column 4).

In WTO, "domestic support" has long been shorthand for "domestic support in OECD high-income countries." Table 5 shows how misleading this would now be. At PPP exchanges rates, Chinese TSE alone was almost equal to the sum of TSEs of OECD members in 2010. Even at current exchange

6 Even though one may argue that the EU "Single Farm Payment" is not fully decoupled (ICTSD 2011), the impact of the SFP on world markets was found to be limited (Bureau and Gohin 2009). Note that current (May 2013) negotiations between the European Parliament and the Council are likely to amend the Commission's proposed reform and "recouple" 10% to 15% of the Single Farm Payment.

7 According to WTO (2013), most recent notifications on domestic support available as of 13 March 2013 referred to 2008 for China, 2007 for Mexico, 2003 for India, and 2001 for Turkey. (PSE) and collective governmental support gives the Total Support Estimate (TSE). In Table 5, the TSE is converted into a common unit using the current exchange rate (euro, column 1), in real terms using PPP exchange rates (column 2), and as a percentage of GDP (column 4).

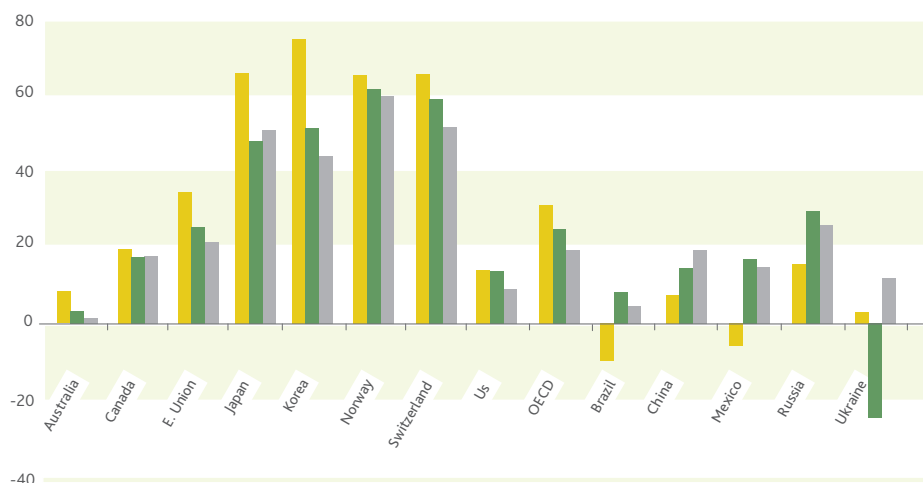


FIGURE 4:

Producer Support Estimate (PSE) in selected developed and emerging countries (1995, 2009 and 2010, in % of total receipts)

LEGEND:

- % PSE 1995
- % PSE 2009
- % PSE 2010

Source: Compiled using OECD data. 2010 figures are still preliminary.

TABLE 4:

PSE in nominal value, real value and percentage of farm receipts, 2010

Source: J.P Butault and J.C Bureau's calculations using OECD data and PPPs from Eurostat and the World Bank. Note that these figures for 2010 are still preliminary and might be subject to significant revisions in the future. In green: emerging countries (author's own classification).

	PSE (Nominal) Million Euro 2010	PSE (Real value in 2005 PPP) Million Euro 2010	PSE, Percentage of total receipts 2010
New Zealand	57	51	1%
South Africa	300	443	2%
Australia	719	521	2%
Chile	228	289	3%
Brazil	5,374	5,662	4%
Ukraine	1,298	2,943	5%
USA	19,292	19,569	7%
Israel	534	545	10%
Mexico	4,695	7,182	12%
China	111,013	193,123	17%
Canada	5,611	4,810	18%
EU (OECD)	71,712	67,218	20%
EU-27	76,535	-	20%
Russia	11,719	19,255	21%
Turkey	16,715	23,091	28%
Korea	13,184	19,366	45%
Iceland	90	84	45%
Japan	39,933	31,970	50%
Switzerland	4,071	2,555	54%
Norway	2,744	1,704	61%

rates, Chinese support exceeded that of the EU and the US. As a percentage of GDP, TSEs in Turkey (3.1%), China (3%), and Russia (1.4%) are much above those in developed countries, averaging 0.7%. A part of these differences reflects the disproportionately high number of farmers in developing countries. Even as a percentage of total receipts, total support in emerging countries is high—29% in Turkey, 25% in Russia, and 21% in China. This is lower than in Japan (56%), but comparable to the EU (23%).⁸ Even in Brazil, which provides a low level of support to individual farmers, General Services.

LOOPHOLES IN DOMESTIC SUPPORT PROVISIONS

Another concern for WTO negotiations is that some of the disciplines introduced by the 1994 Marrakesh Agreement have lost their efficacy. The delay in notifications is only one of the limitations of the WTO discipline in the area of market support. The increasing use of *de minimis* provisions and the automatic rise of the *de minimis* threshold on production

and prices show the scope of this legal “loophole” in the disciplines. The eligibility of some emerging countries that are highly competitive in agriculture to the “development box” (Article 6.2) also raises questions. Under this box, they are allowed to grant considerable investment subsidies, as well as subsidies for variable inputs.

Many measures are notified under the Green Box on criteria other than economic decoupling (Canadian insurance subsidies, for example). While the US, in 2012, retained the conventions used in its previous notifications, it could potentially notify most of its government subsidies to insurance (around \$10 billion) as “green,” invoking “reinsurance” and coverage of management costs. As a result, the Green Box includes measures that impact markets. Some

8 The case of the US (37%) is peculiar since the TSE includes the main US welfare programme, which is provided as nutrition aid (food stamps) and is part of the agricultural legislation.

TABLE 5:

Total Support Estimate in nominal value, real value and percentage of farm receipts and GDP, 2010

Source: J.P. Butault and J.C. Bureau's calculations using OECD data and PPPs from Eurostat and the World Bank. In green: emerging countries (author's own classification).

	TSE in million Euro	Real TSE, PPP 2005, million Euro	TSE as percentage of total receipts	TSE as percentage of GDP
Australia	1,144	829	3.5%	0.1%
New-Zealand	243	214	2%	0.2%
Chile	473	599	6%	0.3%
South Africa	639	942	5%	0.3%
Israel	671	684	12%	0.4%
Brazil	7,644	8,054	6%	0.5%
Canada	7,957	6,822	25%	0.7%
EU (OECD)	82,596	78,808	23%	0.7%
EU-27	87,770	-	23%	0.7%
Mexico	5,636	8,620	14%	0.7%
USA	100,761	102,203	37%	0.9%
Iceland	66	92	49%	1.0%
Norway	3,085	1,915	68%	1.0%
Switzerland	4,431	2,782	59%	1.1%
Japan	45,037	36,056	56%	1.1%
Russia	13,813	22,695	25%	1.4%
Korea	15,270	22,430	52%	2.0%
Ukraine	1,934	4,385	8%	2.0%
China	133,823	232,804	21%	3.0%
Turkey	17,499	24,173	29%	3.1%

of the changes in a given payment between categories over time are troubling. Japan (rice), and more recently the US (dairy) and the EU (fruit and vegetables) have achieved large reductions in the Aggregate Measurement of Support (AMS) by changing calculation methods, as allowed by reforms that were rather limited and cosmetic. WTO Member States have sometimes marginally modified their policy to comply with the legal terms of Annex 2 of the Agreement. Even though the AMS is now a well-accepted indicator, its economic meaning remains questionable.⁹

Biofuel policies are now an important tool for government intervention in agricultural markets. The WTO framework does not contain a discipline in this area. Looking at the reluctance of Brazil and the US to address biofuels during the G-20 meeting of Agricultural Ministers in 2011, as well as the legal issues that surround biofuel subsidies (Josling et al. 2010), binding international disciplines in this area are unlikely. The fact that government intervention in biofuels is not considered a form of distorting support to farmers within WTO is understandable because biofuel policies contribute to higher world prices, while the WTO domestic support discipline is mostly intended to limit production-enhancing subsidies that lower world prices. However, with the new market conditions, the impact of high prices on consumers and on price volatility is a cause for concern. Even if not quite the same as the externalities that were a concern in 1994, biofuel policies do trigger market distortions by rigidifying demand, reducing worldwide stocks of grains and making the entire food market more vulnerable to supply shocks.

These examples show that WTO domestic support provisions are outdated and no longer in line with the main challenges. The whole WTO discipline seems less consistent with market fundamentals than it was in 1994. A paradox is that, in 2012, markets acknowledged that those countries that had steeply raised their agricultural support (to a point where they perhaps infringed WTO rules) were helping to avoid a much feared price peak.¹⁰ This questioned the coherence of the

WTO discipline on coupled support with the need to produce more. Countries such as India, and the G-33 (developing countries), have flagged the inconsistency of calling for more production and rules that oppose output-enhancing subsidies for staple crops.

As Swinnen et al. (2011) explain, the issue of the right agricultural price and the appropriate government intervention is complex. The World Bank has called for more investment in agriculture in developing countries. This requires higher prices than those in the early 2000s and is, therefore, not in contradiction with a WTO discipline that helped the recovery of agricultural prices after decades of decline. The Food and Agricultural Organization (FAO) has argued that massive aggregate production increases are needed, but that such extra production could only alleviate food insecurity if it is accompanied by better access to food (enhanced purchasing power) for poor people. It has highlighted the need to ensure that poor farmers in developing countries gain from productivity improvements, that waste is reduced, and for accompanying measures such as social safety nets. A multilateral discipline that promotes a more level playing field is not in contradiction with the need to produce more. The current WTO discipline imposes ceilings on production subsidies in those countries that most need to boost their supply for food security. As shown by Sharma (2002), the AMS is more binding for developing countries than for many developed ones, even though the *de minimis* clause gives some latitude to countries that have a large agricultural output (Orden et al. 2011).

EXPORT COMPETITION

EXPORT SUBSIDIES

Export subsidies were an important issue during the Uruguay Round, and made for tough negotiations early in the Doha Round. In 2004, the EU agreed to give up exports refunds, conditional on a global agreement. EU subsidies accounted for 90% of global expenditure on formal export subsidies in the early 2000s. The US and a few other countries provided support through subsidized export credits, price-discriminating state monopoly marketing boards, and foreign food aid. Neither the EU nor the US formally dismantled their export subsidy instruments, but they no longer make much use of them (the EU used export subsidies as part of a crisis management package for pork in 2008 and for dairy in 2009, but the quantities exported were limited). EU use of export subsidies has practically disappeared, with a planned budget of less than €140 million in 2012 (against more than €10 billion a year in the early 1990s). The few export subsidies left are those that compensate exporters of processed products for using more expensive EU sugar.

The US too reformed its export credit subsidies, even though Congress voted against turning food aid into cash aid to buy local products, as recommended by development agencies in the 2008 Farm Bill (this issue is currently being reformed

⁹ The AMS hardly provides an economically meaningful measure of support. For example, the EU AMS on wheat is generated by the difference between the virtual intervention price (inactive for 10 years) and the outdated and fixed reference price. This glosses over that the EU has not formally dismantled the intervention price, and calls into question the economic relevance of the AMS calculation. Large subsidies provided through insurance programmes are not part of the AMS as long as they respect the thresholds specified for income loss and compensation, while they affect producers' decisions (Canada, and some components of US insurance programmes).

¹⁰ A meaningful anecdote illustrates this paradox. During the 28th triennial congress of the International Association of Agricultural Economists (the main worldwide gathering of the profession) in Sep 2012, the issue of the WTO discipline and the situation of emerging countries such as China raising their distorting support to farmers was discussed. The market situation was also discussed, at a time where grain prices were high, inventories were low, and the ongoing US drought was a matter of considerable concern. A leading market analyst summarized the general feeling by saying, "Everybody here should be thankful that China does not need to import 50 million tons of corn this year." Everyone seemed to agree.

under pressure from the Barak Obama administration and could lead to more purchases of local supplies). Like the European Parliament, the US Congress seems to be willing to maintain export subsidy instruments even though they are no longer active. This could be a precaution for times of lower prices, or bargaining chips in the negotiation of a possible Doha Agreement.

EXPORT RESTRICTIONS

Export subsidies and related distortions in the world market have shrunk considerably of late, but export restrictions have become more prevalent. Export restrictions not only contribute to price volatility but also threaten the availability of food products, as happened in 2008. WTO disciplines include provisions on export subsidies, but the discipline on agricultural export restrictions is limited. This is an issue on which the Doha Agenda has lost touch with problems that have appeared since the negotiations were launched.

Quantitative restrictions are prohibited by Article XI.1 of the General Agreement on Tariffs and Trade (GATT), but temporary exceptions are authorised “to prevent or relieve critical shortages of foodstuffs essential to the exporting WTO Members” (XI.2.A) and for price stabilization (XX.i, intended for processing industries). There are practical obstacles to an effective discipline. It is difficult to prevent a country from restricting exports when domestic prices for its staple food, say rice, rise and threaten political stability. Determining the actual threat to consumers is difficult—there have been accusations that some corrupt governments invoked a poor harvest and the risk of domestic shortage to ban exports to protect some of their brokers from large losses on the futures market. The timing makes it difficult to enforce the existing provisions since price crises are critical but short-lived episodes (especially by WTO dispute settlement standards).

However, the lack of political impetus for an effective discipline is obvious. Various ministerial meetings under WTO, and the meeting of G-20 agricultural ministers in June 2011 failed to agree on any measure to limit export restrictions.¹¹ While the G20 June ministerial meeting and the subsequent meeting of heads of state and government in Cannes agreed that World Food Programme (WFP) purchases of humanitarian food aid should be exempt from export restrictions, this provision was not adopted when it was tabled by the EU ahead of the 8th WTO Ministerial Conference in December 2011.

POLICY PRIORITIES FOR THE MULTILATERAL TRADING SYSTEM

Although admitting its failure remains a taboo in official arenas, it has been clear to most observers that the Doha Round will not be concluded in its present form. Agriculture

plays an important role in this situation. The negotiations should be refocused and, in some cases, rescaled. This is a daunting task, and the huge amount of work already invested in the negotiations should not be wasted. This section offers suggestions about what the policy priorities might be.

MAKING THE AGENDA REALISTIC: THE NEED FOR COOPERATION THROUGH MULTILATERALISM

Theory and experience have shown that a well-functioning multilateral trading system is extremely valuable. Yet it is also a fragile construction, which needs to be consolidated. This should be a key motivation to do “whatever it takes” to strike a deal.

The intrinsic value of an agreement

The proper functioning of WTO, particularly its Dispute Settlement Body, has limited the rise in tariff protection, despite the recent economic crisis. It has been less efficient in limiting the rise in non-tariff protection and production-coupled subsidies, but these increases would probably have been much larger without the WTO discipline.

Without an agreement to strengthen current disciplines, it cannot be ruled out many countries could substantially increase tariffs without infringing WTO rules. Even within the scope of current disciplines, a tariff war might be costly. This tariff-insurance benefit of an agreement is not easy to sell, for several reasons. First, its costs and benefits would be unequal—the most meaningful commitments would be made by countries with a large binding overhang (most of the developing countries), and the benefits would mainly go to large agrifood exporters. Second, unilateral liberalization has largely proved to be irreversible of late. Upsurges in protection occur occasionally, but the likelihood of, say, India scaling up applied MFN duties on agricultural products to their bound level appears fairly low in the near future, especially as long as agricultural prices remain high. Third, RTAs already offer such insurance for the increasing share of trade flows they cover.

But there are several ways in which countries may exploit the loopholes of the Uruguay Round agreements. Introducing non-tariff measures is one, which is difficult to avoid in agriculture. Caveats such as the *de minimis* clause, or the lack of discipline on export restrictions, also are a problem. The uncertain legal status of agricultural subsidies, since the end of the Peace Clause in 2003, may open a Pandora’s box of recriminations, challenges, or even more “retaliations”, which could lead to the increasing use of the WTO dispute settlement mechanism to solve issues belonging to the

¹¹ Under the Doha draft modalities, Members would be obliged to notify WTO of new export restrictions or prohibitions within 90 days of their entry into force, with the duration of these measures limited to 12 months, or up to 18 months if affected importing countries were to agree.

political or diplomatic arena. Decisions taken by non-elected panellists and lawyers would risk rejection, jeopardizing the entire rule-based system.

The failure to find an agreement since the launch of the Doha Round has opened the doors for an expansion of RTAs, which could result in the fragmentation of world trade, mainly because of possible competition between standards (or their imposition on the rest of the world by some key countries that have concluded a bilateral agreement). Against this background, an agreement covering even a part of the Doha Agenda would be of great value as an insurance scheme and as a way to strengthen the legitimacy and reach of multilateral disciplines.

Such an agreement could bind tariff protection and domestic support at their current levels, and ban export subsidies. Bundling such commitments with others on export restrictions and import subsidies (or downward flexibility on import duties), for instance, could provide a package that would help increase the reliability of the world market as both an outlet and a supplier.

Doha Round negotiators may have overplayed their hand by understating the cost of failure. Now that failure is more than a mere hypothesis, scaling down ambitions might help increase the probability of an agreement being reached. This would, of course, reduce its benefits, but it would also limit its costs, which increasingly appear unacceptable to many countries, or at least to many policymakers.

Limiting the social and political costs of liberalization

Concerns about trade liberalization, and opposition to globalization, have grown as the social costs of the international displacement of activities have become apparent. The benefits for consumers are more diffuse than the costs of dismantling a whole supply chain. Monetary fluctuations have made international specialization even more painful in some cases. In Europe, resistance to trade liberalization is widespread in the suckler cows (beef) and sheep sectors, which have suffered most from international trade liberalization. Indian producers of staple food played a significant role in the failure of the Doha negotiations in 2008. One reason for the preference for RTAs is that controlling the flow of imports is easier, either by applying smaller tariff cuts to specific products or managing their trade through tariff quotas or import ceilings. Allowing a list of "sensitive products" based on the principle agreed upon in 2004 or allowing a large use of tariff rate quotas might reduce the gains of a Doha agreement (Jean et al. 2011). It is nevertheless a condition for making trade liberalization acceptable to a large number of countries. The emphasis on harmonizing tariff cuts, whereby the highest tariffs are cut most, may prove counterproductive, since the political costs of reform will be disproportionately large compared to welfare gains, or even to trade creation (Jean et al. 2013).

Integrating RTAs with the multilateral framework

RTAs are here to stay. Their number and importance seem likely to increase steadily. Ongoing negotiations of mega-regional agreements risk fragmenting the world trading system into several large blocks, each following its own rules. While the debate about their role as stepping stones or stumbling blocks to the multilateral trading system rages, the practical solution may depend on political decisions. Bergsten's (1996) theory of competitive liberalization is arguable, and its "Triple Play" interpretation of the conclusion of the Uruguay Round is not unanimously shared (de Jonquières 2004; Evenett and Meier 2008). Yet, it is widely held that the willingness of the US to respond to EU enlargements was instrumental in paving the way for the Kennedy and Tokyo rounds. Flourishing RTAs are a threat to the multilateral trading system, but they might also prove to be an opportunity.

A number of countries may be considering the potential cost of the intricate system of agreements now in the making. Agreements already signed may reduce the size of some protectionist interest groups, even though they risk creating others willing to protect the rents associated with trade preferences.

For the WTO, the challenge is to offer a route to consolidate the achievements of individual RTAs. This will require a significant degree of flexibility, but mutual recognition of standards and norms, for instance, might prove easier to deal with at the global level when it has been practised at the regional level.

Dealing with concerns about environmental issues

There is widespread concern, mainly in northern Europe, that trade liberalization will endanger efforts to protect the environment, particularly in the area of climate change mitigation. The EU has introduced a constraining cap-and-trade system, and there are fears of carbon leakage through the displacement of particular industries. This fear combines with anger against countries that promote the use of coal, shale gas, and the even more polluting tar sands, which are perceived as destroying climate.

Efforts made to reduce the negative externalities of modern agriculture in Europe are seen as being threatened by imports of products grown in unsustainable conditions, sometimes using prohibited chemicals, or with little regard for natural resources and biodiversity. Most of these externalities are not as global as greenhouse gases, but others such as biodiversity are seen as a common public good. The international legal framework creates obstacles against banning imports of unsustainable forestry products and palm oil, and livestock production, which are seen as a cause of destruction of primary forests. This dissatisfaction with the process of trade liberalization should not be ignored, and for the WTO to gain adhesion, environmental criteria should go beyond the provisions of Article XX of GATT.

BALANCING GAINS

Several authors have proposed ways to update the negotiation agenda to get out of the Doha gridlock (for instance, Baldwin and Evenett 2011). However, the specific role of agriculture in terms of asymmetric concessions does not seem to be fully acknowledged.

The role of agriculture in a global deal

Agricultural tariffs and domestic support are one of the last bargaining chips left to developed countries. It is hard to see the rationale for developed countries having to dismantle their agricultural exports or agricultural tariffs as a bona fide first move, as in the "small package" option proposed by Schwab (2011), for example. For the same reason, any early harvest agreement is unlikely to include substantial and contentious issues, and the principle of the single undertaking is to seek unanimous agreement by bundling together a well-balanced set of contentious issues.

Early harvest is desirable in itself, but it is likely to be within reach only for issues considered either peripheral (improved market access for LDCs, for example), or non-contentious (trade facilitation may fall in this category to the extent that expected gains should be balanced across countries, although recent talks show that the issue can be controversial). The way out of serious disagreements in agriculture will not be found outside a more global agenda. Even in this context, though, the agenda needs to significantly updated.

Bagwell and Staiger (2011) and Mattoo et al. (2011) consider that emerging countries need to give up some of their advantages (such as SDT) and take responsibility for their role in negotiations by entering into a mutually beneficial game of reciprocal concessions with developed and poor countries. The poorest countries should be given guarantees in areas that matter most to them—that food exporters will not impose export barriers; that rules of origin for SDT-related agreements (GSP, for example,) allow for greater cumulation; and that the SDT included in the SPS and TBT agreements eventually translates into genuine content to allow the export of safe goods instead of imposing a *de facto* ban on imports from a country that is not seen as fulfilling a set of conditions. Developed countries should be granted more access for their services and face less "murky protectionism." Their concerns about environmental dumping, currency manipulation, and intellectual property should be acknowledged by emerging countries. And they should be requested to reduce the distortions generated by their tariffs and their agricultural support, as well as the current latitude in using safeguard clauses and *de minimis* exemptions.

Rethinking Special and Differential Treatment

These concerns may be partly addressed by rethinking the SDT. The provision was conceived at a time when multilateral rounds were mainly a way for rich countries—industrialised, as they were then called—to exchange concessions. Not

much was requested from developing countries, because little was expected from them. This framework is outdated. Though many countries are poor and economically fragile, others classified as developing by the WTO are well industrialised and highly competitive in many sectors.

Differentiation exists in WTO. The most obvious example is the widespread exemptions planned for LDCs, but special rights are also granted on some issues to small, vulnerable economies (SVEs), net food importing developing countries (NFIDCs), or (very) recently acceded members, to name just a few. This differentiation has a limited reach. It has proved ineffective in dealing with the huge heterogeneity among developing countries.

A new approach should be considered, which would take into account the fact that no deal will be struck without substantial concessions from emerging countries, while acknowledging the fragilities of the poorest countries. The SDT should be thought of as an intrinsically gradual system, where disciplines are not just differentiated across two or three main categories of countries—even with additional exemptions for specific groups of countries—but where the differentiation is finer, based on a series of quantitative indicators.

This principle of gradual differentiation raises the question whether changes over time in a country's status should be taken into account. A case in point is tariff duties—many now emerging countries were offered the chance to bind their tariffs at a very high level at a time when their status was different. These high ceilings have resulted, in many cases, in a huge binding overhang, and any realistic cut in their bound duties would have little effective impact on their applied rates. This situation contributes significantly to the present deadlock. An agreement that does not cut protection actually applied would be of limited value to most policymakers. So, options should be considered to take into account the lesser value (to partners) of cuts in bound tariffs when they do not affect applied tariffs. A possibility would be to consider cases where base rates used as a basis for concession schedules might differ from bound rates. For unbound products, the draft modalities on non-agricultural market access proposed to use twice the MFN tariff as the base rate (that is, the initial level to which the tariff-cutting formula is applied to obtain the final bound rate). This threshold—twice the MFN, or another multiple of the MFN—might be considered as a ceiling for the base rate used in the agreement's schedules. This would at least help reduce the gap between bound and applied rates.

There are similar concerns on domestic support, where emerging countries have expressed dissatisfaction with the reference level used as a basis for developed countries in the Uruguay Round, which they consider overly high. Questioning the relevance of these reference levels might prove useful for the negotiations to move forward. The 2012 G-33 proposals for special treatment for "domestic support disciplines to enhance food security by supporting poor

farmers” include provisions that would allow developing country governments greater scope to purchase commodities from small farmers at favourable prices for subsequent stockpiling. This issue deserves consideration, but it could prove controversial by allowing directly enhancing production support to be part of the Green Box.¹²

In both cases—tariffs and domestic support—making use of absolute, not relative, references might be considered. The agreement would then include ceilings on average tariffs or on average rate of support. SDT would be factored in through income-dependent ceilings (either by categories or through a formula). The point is not to replace existing liberalization modalities (negotiating them cost a lot), but to complement them.

TACKLING FOOD SECURITY CONCERNS SERIOUSLY

The framework created by the 1994 Marrakesh Agreement has provided a rule-based system that is far superior to alternatives. An indication is the large number of WTO panels that have ruled in favour of a developing country in the arbitration of North-South trade disputes. However, the ability of the current multilateral system to ensure food security is limited by a series of loopholes in international disciplines.

Making world markets reliable providers

Part of the frustration about the asymmetric gains of the Uruguay Round is that poor NFIDCs have not been able to have their voice heard on food security. These concerns are more serious now that agricultural prices are on the high side. So far, multilateral rules have focused on making the world a safe place to sell; they should also aim at making world markets reliable providers. This has become a key condition for a number of countries to accept further liberalization.

Existing disciplines and negotiations are largely focused on tariffs, domestic support, and export subsidies. The focus on tariffs now appears overdone, against a background where the main obstacles to trade seem to lie elsewhere. Yet they appear to be the main obstacle to an agreement. A more consistent approach would put less weight on tariffs, and more on non-tariff obstacles, for which there are growing demands for harmonization and simplification.

On domestic support, we have shown that current disciplines are not free of loopholes. The considerable increase in domestic support in some emerging countries is such that trade-distorting subsidies are no longer the monopoly of the EU and the US. Progress in this area is hampered by the difficulty to communicate in a context where the traditional focus on limiting production-coupled support may appear at odds with calls to enhance agricultural production to meet world food needs. The line of argument should be that investment in agriculture is best fostered by a fair playing

field and that large coupled subsidies in the developed and emerging countries are unlikely to help the most needy countries feed themselves. Relying on market-based price mechanisms appears to be the most consistent approach in the long term. It should remain a guiding principle. Yet, a number of adjustments seem warranted.

Coping with price volatility

Price volatility, particularly low-price episodes, is perceived as problematic in rich countries, because of their consequences for farmers' incomes. For those countries that used to stabilize their domestic prices with tariff adjustments, export subsidies, or restrictions to trade liberalization are seen as part of the problem, even though their policy of stabilizing prices for domestic consumers (implicitly subsidising imports in many cases) often makes the world market price more volatile for everyone else. In poor countries, and in net food importing countries in general, the main concern is the consequences of high prices for poor consumers.

For net food importing countries, producing more and protecting and subsidizing farmers is a way to ensure their food security, and any attempt to restrict the right to do so is perceived as a problem. A successful negotiation agenda should address price volatility. The failure of the G-20 to agree on anything but information sharing makes WTO negotiations more difficult. Real action would require addressing the issue of export restrictions and limiting the possibilities for large countries to reduce tariffs in times of high prices. Commitments might also look at the way biofuel policies are adjusted to market conditions, for instance by removing incorporation mandates when prices are high. The impact of more flexible blending mandates must be examined, given the technical issues that make the blend mix rather rigid in the short run. In the US, for example, the oil industry has organized its supply of gasoline with a lower octane number, counting on ethanol supplementation, making the demand for ethanol fixed in the short run. However, new policy instruments could bring in the required flexibility and turn the biofuel outlet into a stabilization force rather than a source of extra volatility for agricultural markets.

An effective discipline on export restrictions

Addressing export bans and export taxes will be a crucial issue for trade negotiations, since the lack of confidence of governments of food-importing countries in world markets makes them reluctant to liberalize imports and remove production subsidies. It provides incentives not to disarm unilaterally, but also reduces the scope for reciprocal concessions, making an agreement even more difficult to reach.

12

ICTSD comments on the G33 proposal suggested that the provisions set out by India in the WTO could encompass 98% of farm holdings in that country.

Export restrictions may be useful for poor countries wanting to protect consumers from high prices. A well-crafted combination with storage might prove a powerful stabilizing policy (Gouel and Jean 2013). It is only justified for really poor countries, where staple food accounts for a significant share of the budget of poor households, and even in this case targeted assistance programmes are preferable because of their less distributive impacts. The rational use of such policies never entails a mere ban, as has been observed in the past (Headey 2011, for example). Capping export taxes (at a level that decreases with income level, and equal to zero for developed countries) and prohibiting quantitative restrictions on exports appear to be a sound negotiation objective. Despite the practical and political difficulties mentioned in section 5.1, disciplines on quantitative restrictions on exports should be made more effective.

Storage policies may also be useful instruments for domestic price stabilization; when used for this purpose, they tend to limit world price volatility, in contrast to the consequences of using export restrictions. Therefore, they should be part of the negotiations, as they currently are following the G33 proposal on food stockholding, even though it is not obvious whether allowing the government to buy stocks at administered prices is necessary. Strict requirements on countries eligible to do so, including effective targeting of low-income and resource-poor farmers, are absolutely essential conditions if such measures are not to jeopardize domestic support disciplines.

Strengthening the code of conduct for land grabbing

Some emerging and developed net food importing countries worried about their supplies have entered into long-term contracts and are increasingly investing in production capacity abroad. The issue of "land grabbing", which remains outside the current multilateral discipline, also contributes to the unease of developing countries on further trade liberalization. In principle, the meeting of financial capital and natural resources could be mutually beneficial, but in practice, non-governmental organisations (NGOs) and the World Bank have concluded that the benefits are largely captured by investors, and local populations have much to lose (Deininger et al. 2010; Anseeuw et al. 2012). Large-scale investment in land could mean securing the investor's own supply at the expense of the local population. It can be seen as an infringement of market rules, calling for a code of conduct in parallel to trade liberalization discussions.

There is little legitimacy, and many political obstacles, for WTO to be involved in disciplines on land grabbing. Rather than duplicate efforts, WTO rules could strengthen other initiatives. In May 2012, a set of "Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security" was endorsed by the FAO Committee on World Food Security. The main points include protection of tenure rights, especially the rights of indigenous communities. As is the case with many voluntary commitments and human rights

and labour rules, it is unlikely that such guidelines will have a large impact. WTO negotiations should attempt to introduce some provisions to help enforce these commitments.

CONCLUSIONS

The focus set for the Doha Round negotiations when they were launched now appears outdated—this is especially the case for international trade in agricultural and food products, where the global landscape witnessed considerable changes.

In reviewing the main issues on the WTO Agenda, we argue that the first necessity is to make the agenda more realistic, notably by picking options likely to limit the social and political costs of liberalization. Offering a route to consolidate the achievements of individual RTAs and deal with environmental concerns are other important issues.

A second issue is to make sure that gains are balanced. This requires recognizing the special role of agriculture—one of the last bargaining chips for developed countries—and rethinking SDT in a context where the variety of competitive positions of developing countries is obvious.

The third main issue is to tackle food security concerns seriously. This requires shifting the focus of international disciplines to make sure that world markets are not only accessible outlets but also reliable providers. Measures to cope with price volatility should be considered, as well as effective disciplines on export restrictions.

Challenging as they are, these issues are worth confronting. Cooperation through multilateralism is a valuable asset of the world trading system. Current trends toward regionalism, combined with loopholes in some of the existing disciplines, leave the way open to significant deterioration of trading conditions, especially for the most vulnerable countries. Against this background, even a modest agreement would be highly valuable, both as an insurance scheme and as a way to strengthen the legitimacy and reach of multilateral disciplines.

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TRADE AND FOOD SECURITY

Chatterjee, Bipul and Sophia Murphy

INTRODUCTION

Food security had emerged as a high priority for the World Trade Organization (WTO) ahead of its Ninth Ministerial Conference in Bali, but one that seemed to lack obvious political momentum to bring about change. Yet the evolving food security agenda offers an opportunity for governments to address some urgent concerns while strengthening the multilateral trade system.

International trade in agricultural commodities needs better rules. The Doha Agenda has been overtaken by time and events. The food price crisis of 2007–08 shook the confidence of food importing countries in international markets. From a food security perspective, a positive outcome of the crisis was to redouble public and private sector interest and investment in developing countries' agricultural production, which was only just emerging from decades of neglect. But the loss of confidence in international markets continues to have repercussions that exporting countries have yet to take on board.

The explicit understanding behind the Doha Agenda was that developed countries would agree to reforms to the Uruguay Round Agreements (URA) that would better serve developing countries' needs. In agriculture, back in 2001 and in the first years of the negotiations, developing countries defined those needs in two ways. First, as commodity exporters looking to end subsidized competition in international markets and eliminate arbitrary and uneven access rules (for example, tariff peaks and escalation; Generalized System of Preferences (GSP) schemes based on history rather than contemporary needs; and onerous sanitary and phytosanitary (SPS) requirements). Second, as food importers looking to protect their domestic producers from subsidized (or just more highly capitalized) competition in local markets, and develop mechanisms to protect against import surges.

In 2001, the United States (US) and the European Union (EU) were still the decisive voices on agriculture, as they had been during the Uruguay Round. By the time of the Cancun Ministerial in 2003, this was no longer true. Cancun was the last time the US and the EU tried to meet in advance and come to an agreement that would then serve as the basis for agreement among the wider membership. Larger developing

countries with strong export interests in agriculture formed a group (the Group of Twenty, or G-20), including Brazil, Argentina and India, which presented its own ideas. Meanwhile, another group of developing countries that had more defensive interests in international agriculture formed another group, the G-33, including the Philippines, India, Indonesia and Kenya.

The last serious attempt at agreement on the Doha Agenda was in 2008. One of the most public of the differences that led to the negotiations collapsing in July 2008 was the failure of India and the US in particular to agree on how the Special Safeguard Mechanism (SSM) for developing countries should work. India, and the countries it was working with, wanted to be able to raise tariffs even above bound levels to stop import surges. The US, supported by a number of other countries, refused to agree.

It is now more than 11 years since the agenda was launched. Not only have international markets seen three food commodity price spikes, but the financial collapse of 2008 and the subsequent turmoil in international trade and financial markets have also left their mark. Governments have been reluctant at the WTO to confront the implications of these changes. Many developed countries are pushing a "new" trade agenda (focused on investment, stronger intellectual property rights and services), all of which are contentious issues for most developing countries, who insist, at least in public, that nothing new should be added to the negotiating agenda until the Doha Agenda (in some form) is agreed. The impasse has yet to be resolved.

Yet there are a dozen issues on which governments could advance if they were to make the priority a focus on confidence-building and ensuring that they can protect their food security interests while working within a multilateral trading system.

FOOD SECURITY AND TRADE: EVOLVING DEFINITIONS

Definitions of food security and how it might be achieved have evolved since the Doha Agenda was adopted in 2001. The Right to Food has moved slowly but steadily into more mainstream policy circles with the adoption of Voluntary Guidelines for its implementation in 2004, and more recently the adoption of an Optional Protocol that allows individuals to bring complaints against states. UN Special Rapporteur (SR) on the Right to Food, Olivier de Schutter, has contributed a number of substantive reports that address international trade. Food sovereignty, initially a reaction to (and rejection of) the trade liberalization agenda for agriculture by a large number of farmer and peasant organizations from around the world, has gained increasing acceptance from a number of governments. In 2012, governments at the UN Committee on World Food Security (CFS) would have adopted a work programme that included food sovereignty had the US not blocked the proposal.

The food price crisis changed governments' understanding of who was hungry and how to measure vulnerability. The largest numbers of hungry people live in middle-income countries. The revised Food and Agriculture Organization (FAO) measures of hunger, published with the State of Food Insecurity in the World 2012, show that governments are close to realizing the first Millennium Development Goal (halving the percentage of people living with extreme hunger between 2000 and 2015), but are far from achieving their more ambitious commitment, made at the 1996 World Food Summit, to reduce by half the actual number of undernourished people by 2015. The crisis illustrated the importance of assessing vulnerability to hunger—while absolute hunger in many countries had been reduced, the sharp increase in food prices in 2007 and 2008 pushed many households from poor but coping to poor and hungry. A very large share of the population was so close to the food poverty line that the food price increases had a dramatic effect in a number of countries, particularly in Sub-Saharan Africa. Safety nets (such as they existed) were stretched far beyond their capacity.

The 2007–08 food price spike ushered in an era of higher, more volatile, food commodity prices. There were many reasons for the shift—some were directly linked to the price crisis itself, while other factors were already under way as a part of the slow shift from apparent abundance in international supply (and trade rules directed towards managing over-supply) to a better understanding of environmental limits and fears of shortages. There is not so much a crisis now as a new understanding that markets must be regulated not just for the abundance that marked the 1980s and 1990s, but also for periods of scant, and unpredictable, supply. The interconnected markets created by globalization have created not just new strengths but also weaknesses that have jeopardized food security. Higher and more volatile food prices in international markets are part of what needs better regulation. Restoring confidence in international trade will require reforms that redress those weaknesses and better protect the human right to food.

The factors that have reshaped food security and agriculture, including agricultural trade, include,

- Higher energy prices: Energy is a central factor in the cost of production for industrial agricultural systems. Energy prices are also increasingly linked to agricultural commodity prices, through commodity index funds and the rapid growth of biofuels for use in transportation fuels.
- Decreasing agricultural productivity growth: Green revolution technologies no longer provide much productivity growth, while genetic engineering is still in its infancy and faces a variety of political, technical, and regulatory complications.
- Climate change: Production faces increasing uncertainty as weather patterns change in unpredictable ways. The

incidence of droughts and floods has increased markedly in the last decade.

- Increased demand in international markets: Increased meat consumption has increased the demand for feed grains, while significant subsidies and other policies to protect biofuel production and distribution have also increased commodity use dramatically.
- Poor regulation of commodity futures markets: Large volumes of speculative transactions (now larger than the hedging contracts that were originally the purpose of the exchanges) have raised the costs of using the commodity markets for hedgers and complicated the task of buyers who may not have the tools (or the resources) to second-guess where prices are headed in the medium and long term.

At the heart of the loss of confidence in the international system was the decision of food-exporting countries to limit exports with restrictions and bans when the food price crisis hit. Poor countries reported that grain companies did not honour contracts to deliver food, but instead returned payments and sold their grain to customers able to afford the rapidly rising prices. As prices rose and exporters responded with taxes and bans, a number of importing governments panicked. Rice importing countries tendered contracts for more grain than they needed, which fuelled price rises and panic. Traders hoarded rice in the hope that prices would keep rising.

The specific problem of the lack of confidence that exporters will continue to supply international markets even in a crisis, and the more general challenge to globalization that the market does not discriminate need from demand, leaving people's right to food unmet without public intervention, are two areas that we consider below. Food security demands a robust and well-regulated international trading system that strengthens national food security policies and allows public policy objectives to override commerce where necessary.

DOMESTIC FOOD SECURITY AND TRADE

Food security is primarily a domestic challenge. Policy interventions differ from one country to another, shaped by national specificities. For instance, Japan is a net food-importing, high per capita income country that faces decreasing agricultural production due to an ageing population (the average age of a farmer is 65 years) and a shift in dietary preferences towards cheaper imported food. Japan has a cultural preference for the rice it grows at home and a political commitment to support those farmers that remain, although world market prices are cheaper. Japan defines food security as maintaining domestic production in the face of more cheaply available imports. In contrast, Brazil and India, although they have achieved self-sufficiency in food production, face high levels of malnutrition among

their populations. Egypt faces not only a lack of productive resources (little arable land and still less water), but is also heavily dependent on international commodity markets for its food imports—70 percent of the wheat Egypt consumes is imported, and many people live close to the poverty line, leaving the country highly vulnerable to external shocks. Zambia, a low-income economy that depends on agriculture with a large number of subsistence farmers and small-scale farms, is heavily dependent on rain-fed farming. Harvests vary greatly from year to year and food insecurity is common.

One of the first responses to the food, fuel and financial crises was an increased demand for social protection and safety net interventions, as recognised by the adoption of the UN Social Protection Floor Initiative (ILO-WHO 2009). There are four major types of social safety nets for ensuring food security as defined by the FAO. They are,

- Cash transfers or food vouchers
- Food distribution in kind
- Universal food subsidies
- Employment-based safety nets

There are different instances of a shift towards cash-transfer schemes in developed as well as developing countries. This can be attributed to the benefits it provides in enhancing the food security of an individual or a household and the fiscal advantages due to a reduced administrative burden, fewer leaks to those not targeted for assistance, and the possibility of encouraging competition in domestic markets. Generally, trade economists consider cash transfers as being less distorting than food subsidies or in-kind transfers. Yet cash transfers also have weaknesses from a food security perspective. They depend on functioning markets and a steady food supply. If food is not available in the market, cash transfers can have an inflationary effect (FAO 2011).

Keeping this diversity, in mind and challenges in policymaking in this politically sensitive sector (as described in the beginning of this section), the following section highlights food-related social safety nets in five different types of countries, given their level of economic development.

Japan has a large number of programmes to encourage and insure its domestic agricultural sector (agriculture insurance schemes) and also schemes to attract the youth to farming. Brazil has the world's largest conditional cash-transfer scheme (Bolsa Familia) under the Zero Hunger Strategy (Fome Zero). The programme is based on an integrated approach to different dimensions of food security. On the supply side, the agricultural sector in Brazil is characterized by a large number of marginal and smallholding farmers, and on the demand side there are a large number of poor consumers. The government uses its public procurement of food grains to support the livelihoods of poor and marginal farmers while providing poor consumers with access to affordable food in its distribution programmes.

India operates the largest public distribution system in the world. The government distributes subsidised food grains to a targeted population. India also operates a large-scale employment scheme (the National Rural Employment Guarantee Act) that provides the poor with a minimum number of days of work a year. These programmes have had some success, but they face heavy criticism for administrative expenses and high levels of leakages to non-target populations, resulting in high overall costs. India is now experimenting with a pilot scheme to provide cash transfers to poor households instead, which will be implemented as a part of the implementation of the National Food Security Act of India.

Egypt is a net food-importing, low-income country with a huge programme for food subsidy (Baladi Bread). For many years, this programme depended on food aid from the US. The "in-kind" subsidy programme is ineffective in reducing food insecurity. Zambia has an unconditional cash-transfer scheme, but it largely focuses on agricultural input subsidies to increase food production in farm households, particularly for subsistence farmers. Criticisms include inaccurate targeting of the subsidies, the "crowding out" of private investment, and an unsustainable fiscal burden on the state.

It has been found that the physical infrastructure required to handle food storage and distribution is one of the most important problem areas in implementing food-related social safety nets. This is not just true of developing countries such as Brazil and India with adequate food production, but also of low-income, net food-importing developing countries such as Egypt.

Whereas in Brazil and India the problems seem to be more in the area of poor storage leading to spoilage and inefficient distribution systems, Egypt and Zambia have poor transportation infrastructure as well, making it expensive and inefficient to move grains around the country. The result is a mismatch between domestic demand and supply, resulting in regional inequality.

An effective policy regime for implementing food-related social safety nets should focus on the following points.

- Adequate targeting of vulnerable sections of society.
- Agricultural infrastructure, including investment, improved public procurement of food grains, and grain reserves systems.
- Development of local markets and supporting market mechanisms to enable better competition and regulation for optimum utilisation of scarce economic resources.
- Enabling private investment, particularly in rain-fed agriculture, and for food grain production.
- Economic regulations to address policy-induced competition distortions in food grain production and distribution.

Another common response from governments was to increase domestic production to reduce their dependence

on international markets. While equating food security with domestic food self-sufficiency is very rarely any country's policy objective today, there has undoubtedly been an increase in policies directed at reducing reliance on trade, including among countries that cannot easily afford imports when prices spike. This is another area that multilateral trade rules need to take account of.

It is apparent that developing countries, particularly low-income food-deficit countries (LIFDCs), including least developed countries (LDCs), are faced with a circle of underdevelopment. To address the short-term necessities of ensuring better food security for their populations with limited economic resources, many of them are compromising on long-term investment required for a more sustainable and broad-based food security.

The question is how do we draw a linkage between this domestic challenge and the global food trade regime? Are the rules governing the multilateral trading system as it stands today, including the manner in which "food security" is being dealt with in the Doha Round of negotiations, sufficient in addressing this linkage?

This question, and some of its dimensions, is addressed in the next section.

TRADE AND FOOD SECURITY: THE URUGUAY ROUND AND SINCE

The Uruguay Round Agreement on Agriculture (URAA) formulated disciplines pertaining to market access, domestic support, and export subsidies. The agreement contained a "built-in agenda" that called for governments to continue to liberalise trade in agriculture. This was because the URAA itself went only a small way towards really opening agricultural markets, especially in developed countries with a history of high levels of domestic support for agriculture. The agreement included a provision for countries to meet and share implementation experiences and concerns, in something called the Analysis and Information Exchange.

The Doha Round of negotiations did not just pick up on the built-in agenda. It went further, and the negotiations gained still more complexity after 2003 and the Cancun Ministerial, when different groupings of developing countries (the G-20 and in particular the G-33) made food security a top negotiating priority. Agriculture serves multiple purposes simultaneously, from commerce to rural development to environmental management. The political economy of food and agriculture is complex, and the governments that have pushed a simpler agricultural export line have not met with much success, either with developed or developing countries. The political economy of food security drives competing agendas—one would promote more open markets to secure cheap food from international markets for urban

populations, while the other is focused on rural livelihood security, which tends to drive a conflicting agenda towards more protection. Most countries end up coming down on one side or the other—the following groups are an indication of their interests.

- G10 –net food-importing, mostly developed countries such as Japan, Norway, and South Korea (which is technically a developing country at the WTO, although also a member of the Organisation for Economic Cooperation and Development) as well as Mauritius. The group seeks to maintain a high level of protection for their domestic producers; they are all large importers but also careful of their own production.
- G20 – a combination of larger developing countries such as Brazil and India having offensive as well as defensive interests vis-à-vis trade in agriculture.
- G33 – a group of developing countries such as India, Indonesia and the Philippines that are primarily concerned with food security linked to import dumping and rural livelihoods.

Owing to its concerns on food security and its interests in trade of agricultural products, India is a member of both the G20 and G33.

Apart from these core groups in the Doha Round of negotiations on agriculture, there are other players such as Recently Acceded Members (RAMs), Special and Vulnerable Economies (SVEs), LDCs, and the Africa Group. All have put forward positions in the negotiations on agriculture.

Groups outside the WTO have also begun to push for a more responsive trade agenda. For instance, the 2011 Accra Declaration of the African Union on WTO issues called for the establishment of a comprehensive work programme to mitigate the impact of food price volatility on affected African countries.

On trade-related aspects of food security and their linkages with market access on trade in agriculture, the varied stands taken by WTO Members have become more pronounced since the recent period of high and volatile commodity prices in international markets. A World Bank study demonstrated that the simultaneous decision of importing governments to try to increase imports by lowering tariffs and exporting governments' imposition of export restrictions exacerbated price spikes (increasing demand and reducing supply simultaneously). An FAO study showed that government responses included reduction in import tariffs and custom fees (43 countries), selling grain from public stocks (35 countries) and restricting or banning exports (25 countries). Just as export subsidies and import restrictions contributed towards depressed commodity prices over much of the period 1980–2005, export restrictions and import subsidies exacerbated the impacts of price surges in recent times. It is critical to look at how trade policies can address these situations.

The Revised Modalities on Agriculture (Rev. 4) deal with domestic support issues such as government service programmes, public stockholding for food security purposes, and domestic food aid. On the other hand, modalities on export subsidies deal with export credit guarantees and insurance, food aid, exporting state trading enterprises, export restrictions, and taxes. Market access is negotiated through tariffs, tariff quotas, special safeguards, and importing state trading enterprises.

The following points will help in understanding the Doha Round of negotiations on trade and the links to food security.

- The URAA notes that a Member that maintains export restrictions must give due consideration to the effects of such prohibition on importing Members' food security. One of the more ambitious proposals in the Doha Round on Export Restrictions advocates that any new export restriction should be limited to the "extent strictly necessary", the exporting country should demonstrate the impact of the measure on LIFDCs and it should engage in consultations prior to the implementation of the measure. However, the workability of this solution is questionable. A more feasible solution is to require exporting countries to notify any change in export taxes under the Rapid Response Forum established by the Agricultural Market Information System of the G-20, which will result in dissemination of critical information and limit speculation-driven commodity spikes.
- Cash-based food aid (as opposed to in-kind food aid) has been widely promoted under the Doha modalities. WTO rules allow the operation of the disciplines to be adjusted in case of emergencies. Food aid has been used by some donors to create an export market for domestic producers. The Revised Modalities (December 2008) on disciplines note that food aid should not be used to promote market development objectives, and the re-export of food aid must be undertaken only to the extent that is essential and in such a manner that it avoids commercial displacement.
- An SSM has been proposed to allow the imposition of higher duties when volumes rise or prices fall below a certain level without having to prove that serious injury was caused. Debate persists on whether the application of these measures should be restricted to crops related to food security or should include crops important for the livelihood security of vulnerable populations. Ensuring livelihood security would support the extension of the SSM to both essential food crops and those crops that are important for the income stability of farmers and farm workers.
- The G-33 has proposed that Special Products (SPs) should be subject to lower tariff cuts than other agriculture tariff lines, a proposal that was accepted by other WTO members in July 2008. The indicators used to identify SPs would be based on food security, livelihood

security, and rural development. In addition, SPs should be a staple food in the local diet, consumed in its natural form, and produced domestically (not imported) primarily on farms that are of average or small size that employ a significant proportion of the agricultural population.

Despite the talk of improving local food security situations through better trade regulations, it is often argued that because of lengthy, uncertain and sometimes resource-inefficient supply chains that could worsen domestic food security, especially in the light of climate change, countries should undertake measures to become more self-sufficient in food production. For example, as UN Special Rapporteur (SR) on the Right to Food, Olivier de Schutter proposed that countries should aim to increase domestic food production, especially because of the six-fold increase in the costs of importing food into LDCs between 1992 and 2008. De Schutter recommended that in international negotiations such countries should accord priority to their domestic national food security requirements, support small-scale farmers, and maintain the latitude to exercise safeguard measures.

Due to resource (including natural resource) and other constraints, however, others do not see increased domestic production as the right response. Former WTO Director-General Pascal Lamy, for example, argued that international trade could continue to serve countries with diverse interests with instruments such as the 1994 Marrakesh Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least Developed and Net Food-Importing Developing Countries and food security-related Special and Differential Treatment (SDT).

This faith in the existing instruments is misplaced. The 1994 Marrakesh Decision was stillborn, while it was the inadequacy of the SDT included in the Uruguay Round that fed the political pressure to launch the Doha Development Agenda, as it was known, in 2001.

Therefore and given this complex linkage, in the final section we summarise a few central issues for food security and trade and make recommendations for multilateral rules that would support a more effective role for trade as a means to enhance and ensure domestic food security.

WHAT NEXT FOR FOOD SECURITY AT THE WTO?

FOOD SECURITY AND TRADE: CHALLENGES AHEAD

The crisis of confidence in international trade as a source of food security persists. The long years of argument at the WTO over SPs and the SSM were an indication that LIFDCs had reservations about the effects of international trade on their food systems. Many of them were concerned about

the effects of cheap food, dumped at less than cost-of-production prices in importing countries at the expense of local producers. The food security challenge was how to attract enough investment in agriculture in developing countries in the face of oligopolistic market power in international commodity markets and consistent dumping that resulted from bad domestic agricultural policies, particularly in the US and EU.

The 2007-2008 food price crisis changed governments' view of what the trade-related food security challenges are. Abruptly, questions of scarcity came to the fore. Importing countries realized that while dumped imports were a problem, an absolute scarcity of supply in international markets might be worse, and more likely, given changes in international markets. These changes included a dramatic increase in demand for agricultural commodities created by the biofuels sector; a higher incidence of extreme weather conditions due to climate change; and, increasing price volatility linked to low levels of public stocks and a dramatic expansion of speculative investment on commodity futures exchanges.

The measures discussed below pertain to the need to rebuild confidence. They include clear, transparent, and binding disciplines on the use of export taxes and bans; the exemption of food aid for humanitarian purposes from commercial rules; clearer rules for public stock-holding both in exporting countries (as a confidence-building measure) and in importing countries (against the eventuality of price spikes or the failure of commercial firms to deliver food in a crisis period, as happened in 2007-2008); an SSM to protect developing countries from import surges; and, provisions for differentiated trade liberalization for developing countries' most sensitive products from a food security and rural livelihoods perspective. These changes should not be difficult, technically, and would make a big difference politically. Some of them have already been agreed in principle by the Group of 20 largest economies (not the same as the G-20 within the agriculture negotiations), though little has been done to implement the policies. Yet it remains unclear whether the WTO membership as a whole is ready to embrace these ideas.

Over the long run, trade rules have to confront some big challenges. They include the privatization of food safety standards (for example, through GlobalGAP) and the resulting marginalization of public standard-setting and enforcement, while food safety challenges continue to grow, in part because of globalization and increasingly complex (and geographically distant) production chains. Environmental constraints continue to make themselves felt because markets continue to ignore environmental costs and benefits in the economy and governments have been reluctant to correct the market failure. Industrial agriculture plays a major role in greenhouse gas emissions and is spreading rapidly to developing countries. There are as yet few, if any, multilateral agreements that attempt to change industrial agricultural practices, but it is only a matter of time

before they will become essential. Already the gaps between different countries' environmental standards are a cause of tension and hostility in trade negotiations.

EXPORT RESTRICTIONS

While it is true that the General Agreement on Tariffs and Trade (GATT)/WTO disciplines to deal with export restrictions are weak and the economic arguments for their elimination are strong, it is also true that, politically, export restrictions are too sensitive to be eliminated. A number of countries, India among them, produce enough to export yet face high levels of food insecurity and malnutrition. When food inflation is high, as it is today, an ambitious proposal to discipline export restrictions through multilateral trade rules is not politically feasible.

This does not preclude the possibility of useful reform. The lack of a working definition for the terms used in GATT Article XI on export restrictions, such as 'temporary' and 'critical,' creates ambiguity about the rule's interpretation. Such ambiguities create at least two problems: they make it difficult for importing countries to flag an injurious trade concern when they are being negatively affected by the restrictive measure; and they make it easy for exporters to justify their restrictive measure without fear of retaliation, which is especially problematic as the rules allow all forms of restrictive measures.

Trade negotiators should decide: is Article 12 of the URAA a sufficient basis for the regulation of export disciplines? The Article calls for WTO Members to notify, consult and give due consideration, yet the current implementation of these procedures is poor. The Doha Round of negotiations has seen some specific suggestions in this regard, particularly by Japan and Switzerland. Those suggestions indicate that there is a growing sentiment to strengthen the requirements on information provision, notifications and consultations.

An alternative attempt to discipline export restrictions is a proposed export tax rate quota scheme that would mirror the tariff rate quotas used to discipline import restrictions. In this case, an in-quota (meaning volume of exports that would not be subject to export taxes) would be generated using past export levels as a baseline (either a fixed average using a base period or, preferably, a moving average). The in-quota tax could be the average export tax applied in recent years, but no more than 40 percent, which at first glance appears to be relatively high for an in-quota rate but has to be set liberally to garner support for the proposal.

The process of tariffication for fixing bound rates is time-consuming and, therefore, a simpler compromise would be required. This could include setting the bound rate at twice the in-quota rate. Further compromises could be considered such as instruments similar to the URAA's Annex 5 special treatment and special agricultural safeguards, with higher conditionalities. A bound tax would be necessary to render this alternative effective.

A tax rate quota scheme would not be a radical departure from current practices as many countries implemented a similar scheme during the recent food crises, typically switching from low tax to quotas to high tax, including minimum export price. Such a scheme merely formalises this practice, but it would give much needed predictability to export-restricting policy.

SPECIAL SAFEGUARD MECHANISMS

The SSM is one of the most contentious issues in the Doha Round of agriculture negotiations because it would allow countries, under some formulations, to raise tariffs above their bound levels (though temporarily). Some observers claim the proposal did not just hold back progress in the negotiations on agriculture, but also in the Doha Round as a "Single Undertaking" package.

It is important to note that the SSM is a contingency restriction on imports imposed temporarily to deal with special circumstances such as a sudden surge in imports of particular agricultural commodities. They give the right to countries to have recourse to tariffs beyond bound rates to protect domestic producers. The safeguard duties under the proposed SSM would be activated by either an import quantity trigger or a price trigger.

The G33 position is that the SSM should be simple and operationally effective and that price triggers should be as effective as quantity triggers, depending on the emergency they seek to address. The US position is that it is a duplication of the concept of SPs (see below) because both instruments could be used for the same purpose. The G-33 argues that the concept of SSM is different from that of SPs as the latter is a long-term exemption to deal with structural issues vis-à-vis rural development and food and livelihood security, while the former is a short-term mechanism to help developing countries cope with price fluctuations and import surges.

If the import quantity trigger is set too high, that SSM (import restriction) loses its efficacy because it can only be used in the most exceptional circumstances. The same holds true if the price trigger is set too low. And this is the bone of contention, particularly between India and the US. However difficult, the issue nonetheless needs attention—having agreed in principle that some kind of measure of this kind is desirable, it is now important to bring both technical expertise and diplomatic understanding to the problem. Given the empirical experience of tariff use (which tends to be lower than allowed ceilings), and the continued significant scope for developed countries to use extremely high tariffs on a handful of sensitive products, it seems unwarranted to insist that no tariff should ever rise above a rate bound 20 years ago, in particular for developing countries that are coping with food imports that continue to receive subsidies and other forms of protection in the markets where they are produced.

SPECIAL PRODUCTS

Also proposed by the G-33, SPs would allow developing countries to designate a certain number of products that would be exempt from tariff reduction requirements under the terms of a new agreement. The crops would be designated by developing countries on the grounds of their importance to either food security or employment. Like the SSM, the proposal to allow a list of SPs has been contentious.

The Group of Ten (G-10) has also proposed exemptions for what it calls "sensitive products." Sensitive products were first introduced by the EU. Products listed as "sensitive" would receive less stringent disciplines in relation to tariff and domestic support reductions. In exchange, tariff rate quotas for these products would be expanded. The proposal works well for a number of developed countries that protect relatively few agricultural commodities but do so with very high barriers.

PUBLIC STOCKHOLDING OF FOOD GRAINS

Food-related social safety nets are a major policy measure to ensure food security in many developing countries and LDCs, including LIFDCs. To accord due importance to domestic food security in furthering agricultural negotiations, the G33 proposed in November 2012 that food stocks purchased from developing country markets at administered prices should be exempted from aggregate measure of support (AMS) calculations. The group also proposed that measures dealing with farmers' security such as farm support programmes, land reform programmes, drought management, flood control, nutritional food security, issuing property titles, rural development, and rural livelihood security be exempted from reduction commitments.

The G-33 proposal took into account all four aspects of domestic food security—availability, accessibility, utilisation, and stability. The question is whether these concerns can be addressed by the existing multilateral rules or if a revised and new set of rules is needed. India has proposed a substantive revision: that public procurement of food grains for food security purposes should not count in the calculation of AMS.

Since the last-minute deal in Bali, where India threatened to block any kind of accord if its food security concerns were not put on the agenda, agricultural trade talks have struggled. India's change of government in May 2014 has if anything intensified the disagreement as the new government has taken a stronger stance. In July 2014, India refused to sign the Protocol on the Implementation of the Trade Facilitation Agreement, one of the Bali outcomes, on the grounds that progress needed to be made on public stockholding for food security purposes at the same time.

A few developing countries have privately expressed concern that India and other large stockholders might dump their reserves on international markets, depressing prices. Pakistan has been the most vocal about this issue. WTO rules are

clearly needed to discipline the export of food stocks purchased at managed prices, if only in recognition of how hard it is to gauge how much stock to hold and the public policy preference for a little too much over not holding quite enough.

The fight offers an occasion to reform and update the URAA. Several important reforms could support the proposal to exempt stocks acquired for public stockholding from the AMS. These include updating the now absurdly out of date baseline years used to measure prices (determined to suit the political needs of the EU and US before the URAA was signed). Encouraging governments to show how their procurement programmes are assisting small and marginal farmers is also important. The issue is of importance for many smaller and poorer countries than India. LIFDCs cannot hope to provide food for more than 60 percent of their populations, as India is now committed to do as per its National Food Security Act. But they are at a significant disadvantage as buyers in a world market that has remained volatile and much more expensive than it was before 2007-2008, and building greater in-country storage capacity offers an important risk management strategy. Clear rules about how to go about this without undermining other countries' food security strategies would be invaluable.

FOOD AID

The Doha negotiations sought in various ways to protect food aid from commercial demands. The most recent iteration of the various proposals would be to get countries to agree to a code of conduct that, among other things, would exempt food aid from export taxes. The economic G-20 has supported this idea, but the WTO membership has not been able to find sufficient agreement to put the idea into effect. It is possible the code would be better negotiated in another forum, as WTO has agreed in the past that it ought not to be dictating humanitarian policy, but rather taking the lead from other agencies. It would nonetheless be a helpful gesture if the WTO membership were able to move past the many issues that divide them to agree on some simple but important rules in the public interest.

Now that the Food Assistance Convention (the new name for the Food Aid Convention) has been renewed, there are some parameters to guide WTO in its food aid work. The biggest challenge to food assistance during the food price crisis was the need for significantly more money to acquire the same amount of food—the problem was an illustration of why in-kind as well as financial resources are important for food aid. Any WTO rules on this topic will have to allow that relying purely on financial mechanisms may not be adequate.

CONCLUSIONS

Many of the lessons for food security of the past decade point to the need for new rules. Numerous countries and regions suffer from poor agricultural productivity. Stable prices are a proven and powerful tool for encouraging agricultural investment, improving rural livelihoods, and making real inroads against poverty. There is new interest in the work of Peter Timmer (see Franck Galtier, for example), which highlights the need to complement trade with other measures to ensure better overall outcomes for development, and food security in particular.

To contribute to food security, the international market must be a trusted supplier. In an era of price volatility and resource scarcity, not to mention competing demands on agricultural land for non-food purposes, this will require exporters to submit to disciplines just as they have pushed importers to be disciplined.

There was a real opportunity for governments to bring the AoA into the 21st century in Bali. A lot of technical work on hunger and trade had been done, and ample analysis of what was wrong was available. Governments failed to meet the challenge, although India forced the issues on to the agenda. What is needed now is political commitment. If the WTO membership fails to recognize and support countries' food security needs, the politics of trade negotiations will remain deadlocked. A first step would be for exporters to show good faith, to encourage importers back to the table. Focusing on "rich" country issues such as tighter intellectual property rights and increased protection for foreign investors rather than carrying out reforms in core areas such as agriculture is an invitation to further deadlock and possible irrelevance.

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AGRICULTURAL TRADE AND FOOD SECURITY: SOME THOUGHTS ABOUT A CONTINUOUS DEBATE

Eugenio Diaz-Bonilla

INTRODUCTION

This paper is an input to the work of the "Expert Group on Agriculture, Trade and Food Security Challenges" as part of the E15 Initiative of the International Center for Trade and Sustainable Development (ICTSD). The group on agriculture and trade is co-convened with the International Food and Agricultural Trade Policy Council (IPC).

This is a follow up to the meeting of 27–28 September 2012 in Geneva, and focuses on the topic assigned to subgroup 2—"Agricultural Trade Policy and Food Security: Overcoming Poverty and Ensuring Access to Food," which I coordinated. Subgroup 2 was asked to "explore ... trends related to agricultural trade and food security, and identify options that policymakers could pursue to address them."

What follows is a brief discussion of those topics. Section 2 defines some conceptual issues. Section 3 focuses on the current high food price context and tries to describe the present and future scenarios. Section 4 looks at the links between energy, biofuels, and food prices, and section 5 considers climate change issues. Section 6 summarily discusses food security concerns in the Uruguay and Doha rounds, as an introduction to section 7, where World Trade Organization (WTO) disciplines and some current debates are briefly reviewed. The next two sections focus on two specific topics currently being discussed in the context of food security concerns—food stocks and domestic food aid (section 8), and export constraints (section 9). The concluding remarks are in section 10.

SOME CONCEPTUAL ISSUES

WHAT IS FOOD SECURITY?

It is important to start from a common definition of food security, such as the one adopted at the World Food

Summit in 1996— "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life." It is widely acknowledged that there are four main components of the concept.

- 1) Availability (which depends on domestic supply, stocks, and trade);
- 2) Access (which is influenced by income, employment, and poverty patterns related to economic growth and development);
- 3) Utilization (which depends on the quality of food, and also on other factors such as health services, water and sanitation infrastructure, education, and women empowerment); and
- 4) Stability (that physical and economic access and proper utilization should take place "at all times," according to the definition of food security). Figure 1 (adjusted from Smith 1998) shows the different channels through which trade (and other macroeconomic factors) may influence the components of food security. Domestic production and imports determine national availability (component 1). A growth pattern that generates broad-based employment and income opportunities is crucial for food access (component 2). The figure includes the channel of government revenues, which may be used to implement policies and investments that help with different components of food security, such as agricultural research and development (R&D) (components 1 and 4), basic health services and water and sanitation systems (component 3). The figure also emphasizes that what counts in the end is the impact at the individual level (which is labelled 'nutrition security').

To discuss the multiple channels through which "trade" impacts food security, one must consider first three different ways the word is being used: first, it may refer in general to the economic exchange of goods and services; second, it may imply "trade policies" as border measures, such as tariffs or quotas; finally, it may be used to refer to "WTO trade disciplines," which cover a far larger set of public policies. The different meanings of "trade" and the potential links to food security are discussed immediately.

TRADE AND FOOD SECURITY

Most of the food consumed in developing countries is produced domestically. This could lead to the idea that trade is not necessarily a primary concern for food security. However, trade can provide the margin necessary to stabilize prices and adequate quantities of food in the domestic market, even if the largest percentage is produced and consumed domestically. Also, trade in agricultural and food products has been expanding (and projections suggest this trend will continue in the coming decades), which means

that for some products and countries, food imports as a percentage of domestic consumption has been increasing, and will continue to rise.

Therefore, it is relevant to consider the implications of trade for food security. One fact to consider is that the variability of domestic production in individual countries appears larger than the variability of domestic consumption (Diaz-Bonilla et al. 2003). This implies the existence of mechanisms that keep domestic consumption stable in the face of more volatile domestic production (which, for individual countries tends to also be higher than variability in world production). Those mechanisms are international trade and domestic food stocks, which countries use in different proportions as complementary ways to keep consumption stable. Therefore, not using trade and depending on production self-sufficiency as insurance against fluctuations may increase volatility in food access.

Recent research by the International Food Policy Research Institute (IFPRI) (Minot 2011 and 2012) has shown that

- a) domestic food price volatility in several Sub-Saharan countries has not changed much with recent increases in international price volatility;
- b) volatility seems larger in domestic markets than in international markets;
- c) commodities that are traded more internationally have lower volatility than those less traded; and

d) volatility is higher in countries/commodities where governments intervene actively in markets through state-owned enterprises.¹

These findings suggest that self-sufficiency may not be the best strategy for developing countries to reduce volatility in access.

Another way in which trade has helped food access is that the food import bill as a percentage of total exports (a more adequate indicator of food security problems at the country level than the net food importing status) has declined for different categories of developing countries such as Net Food Importing Developing Countries (NFIDC, a WTO category), Least Developed Countries (LDC, a UN category), and Low Income Food Deficit Countries (LIFDC, a category utilized by FAO) (Figure 2; data from FAOSTAT). This reduction in the food bill as percentage of total exports is not because food imports have declined in developing countries (they have increased) but because all exports (in value) have expanded (and by more than food imports), thanks to expanded global trade.

1 For the analysis of patterns of volatility, the dataset uses wholesale and retail food prices compiled from local statistical agencies by the Famine Early Warning System Network (FEWS NET) for 10 staple foods (beans, bread, cooking oil, cowpeas, maize, millet, rice, sorghum, teff, and wheat) in 15 countries (Chad, Ethiopia, Guinea, Kenya, Malawi, Mali, Mauritania, Mozambique, Niger, Nigeria, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe).

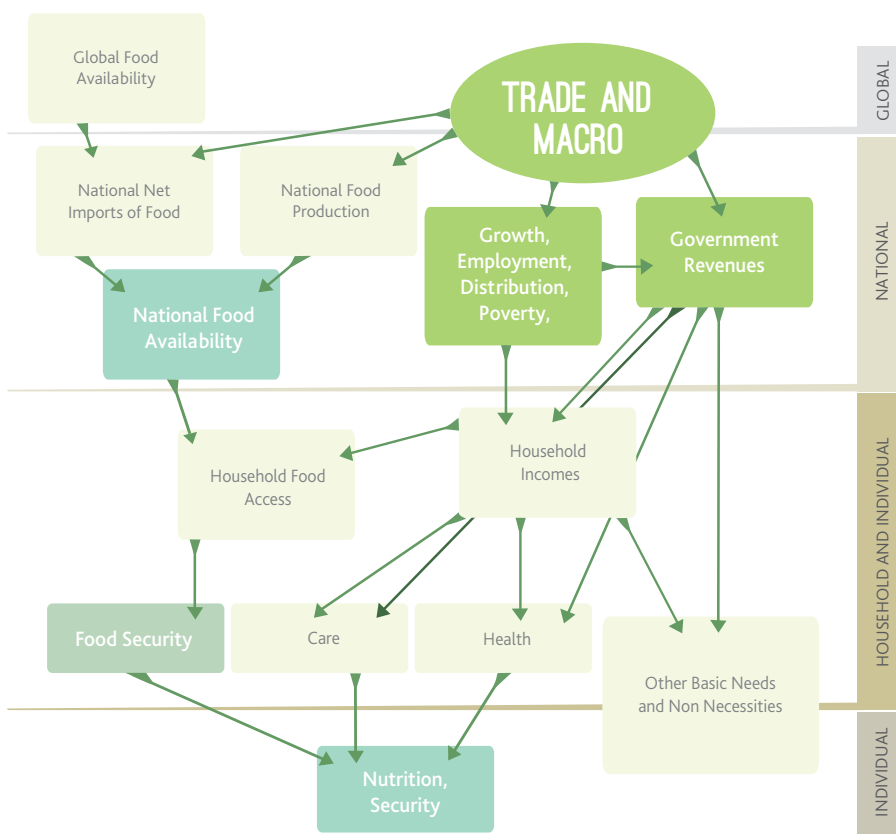


FIGURE 1:
Channels through which Trade Affects Food Security

The 2007–08 food price spike (reflected mostly in trade data for 2009), although clearly visible in the 2000s, generated a ratio of food imports to total merchandise exports that is still below the values of previous decades (that is, at this level of aggregation, the recent spike in food prices put less pressure on trade balances than the previous ones during the 1970s). This smaller impact is, in part, because prices of other commodities exported by several developing countries have been increasing as well (see the discussion of terms of trade below).²

TRADE POLICIES AND FOOD SECURITY

Since the E15 discussion is conducted in the context of the Doha Round, this paper focuses on trade disciplines related to WTO agreements, in particular the Agreement on Agriculture (AoA), although other issues related to non-agricultural market access (NAMA), intellectual property rights (IPR), sanitary and phytosanitary (SPS), and fisheries also have implications for food security.

Even within this narrow scope, it is important to highlight three additional points that complicate the analysis of the links between trade, trade policies, and food security.

First, trade, as shown in Figure 1, is only one of several factors affecting food security. The best trade policy or the best WTO framework will not solve food security problems if other, and perhaps more crucial, factors are not supportive. For instance, the importance of broad-based, pro-poor growth is obvious. Also, empowerment of women and the provision of health services appear equally or more relevant for food security than the usual indicators of food availability per capita in many developing regions (Smith and Haddad 2000).

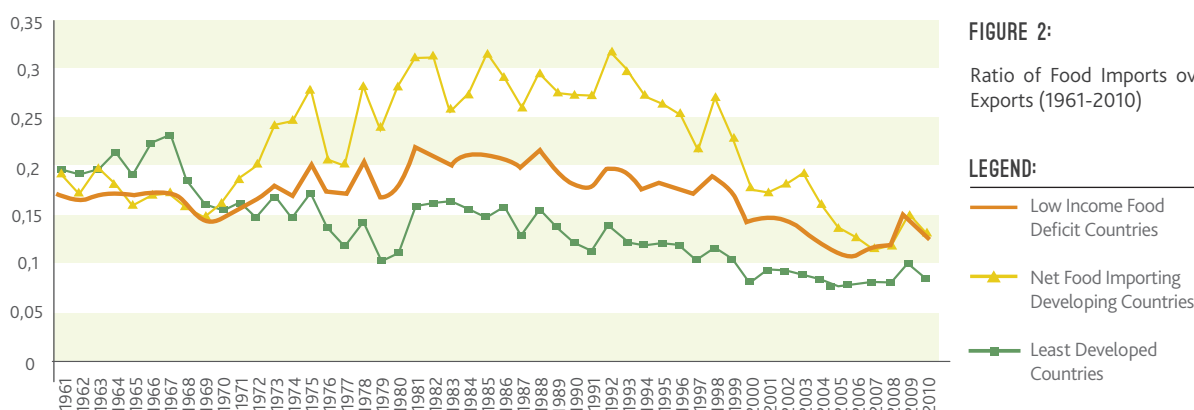
Second, the same trade policy may have different impacts depending on the interactions with other policies and structural factors. For example, reduction of tariffs in agriculture will have different results on a country depending on, among other things, whether this is done unilaterally by that country, or it is the result of a multilateral exercise. The effects of such tariff reduction in agricultural goods may differ depending on whether that happens only in those products,

or whether the policy change includes other products and services as well. These examples can be multiplied several times, including not only other trade policies, but also macroeconomic factors such as different exchange rate or monetary policies. Therefore, it is necessary to consider what economists call a “general equilibrium analysis” (that is, a reasonably holistic view of the policies, links, and impacts).

In the case of agriculture, structural aspects such as land distribution and rural infrastructure are also crucial to determining the effects of the same trade policy—reducing (or increasing) agricultural tariffs in a country with relatively equal land distribution and good infrastructure is likely to have very different impacts from the opposite case of unequal land holdings and bad infrastructure. For instance, general protection and subsidies of the type that are disciplined under the WTO AoA, although in many cases implemented in the guise of helping small farmers, tend to favour larger farmers, who have more produce to sell and will have their incomes increased. This additional income by large producers may lead to more rural employment (a positive impact), but could also tilt the field against smaller producers by reinforcing economy-of-scale advantages and providing them with the economic means to buy out and displace smaller producers. The best option to help small farmers is through an expansion of ‘Green Box’ interventions such as agricultural R&D and infrastructure aimed that focus on them and try to reinforce their competitiveness and sustainability.

Third, because of the heterogeneity of households, trade policies (or any other general policies for that matter) will have differentiated impacts. But it is at the household and individual levels that food security issues take a concrete form. Therefore, trade policy (or other general policies) may be blunt instruments to address food security problems, and more differentiated policy approaches are needed. Such differentiated approaches need to consider several issues. First, economic access is not a problem of food prices per

2 It should be noted, though, that these aggregate numbers mask a broader range of situations for individual countries, some of which, like Haiti, were hit both by high food and high oil prices, without compensating developments in other exports.



se, but also depends on the relationship between household incomes (broadly defined), on the one hand, and the cost of the minimum household food requirements (MHFR), on the other. Both income and costs involve price and quantity variables, and not just price variables as is sometimes implied by analyses that compare food prices only with wages while ignoring quantity effects, such as employment. Therefore, to assess economic access to food, the proper equations to consider are as below.

Incomes = Wages*Employment (or Prices*Quantity of goods and services sold by the poor)³ + Subsidies/Taxes from government + Other transfers and services to the poor.

Costs = Food prices*MHFR + Costs of complementary goods and services needed to properly utilize food (Diaz-Bonilla and Ron 2011).

The general poverty line is usually the cost of MHFR with an additional mark-up representing other expenditures by the poor; and the line for indigence is usually the cost of MHFR, without any additional expenditures. Therefore, poverty and food security measures should be closely linked, by construction.

An implication is that if a trade policy measure increases the cost of MHFR, this, other things being equal, would negatively affect both poverty headcount and food security for urban households, which are basically net food buyers. But within rural households there are families that are net buyers, such as landless rural workers, and even farmers who may experience seasonal variations as net sellers/buyers.

Only poor families that are net food sellers (which may not necessarily be the largest percentage of rural families in many developing countries) would benefit, if the analysis remains short term and static. However, there may be positive dynamic effects for net food buyers if the trade policy measure, even though it increases food prices, raises employment and/or wages as well (both in rural and urban areas) by amounts that compensate for the greater cost of food.

For example, higher agricultural and food prices may lead to increased investments by the private and public sectors in agricultural production and in rural areas that generate positive employment and wage effects. Also, there may be some positive dynamic effects if the trade policy measure, even though it increases food prices in the short term, leads to investments in productivity that may reduce production costs and prices in the medium term.

All these interactions need to be analyzed in a general equilibrium setting.

In any case, a typology of households regarding poverty/food insecurity must consider whether they suffer chronic poverty/food insecurity (which usually has more fundamental determinants than trade issues) or it is a transitory problem,

and, in the latter case, what are the external events (that Sinha and Lipton 2002 have called “damaging fluctuations”) generating the problems. Typically, only a small part of those fluctuations may be caused by trade and trade policies; most of them are related to macroeconomic crises, weather shocks, health events, the spread of conflict and war, and the like. From the point of view of poor and food insecure households, the main issues are their exposure and vulnerability to those “damaging fluctuations.” Those shocks may affect livelihood strategies in ways that perpetuate poverty if, for instance, producers lose productive or human capital as a consequence. Also, shocks may increase the levels of risk aversion, affecting the adoption of new and potentially more productive technologies or activities and thus creating poverty traps that keep people in low productivity activities (Sinha and Lipton 2002).

To summarize, when discussing poverty and food security problems it must be remembered that trade policies are just an instrument (and in several cases a blunt one) to address those concerns, with a variety of potential aggregate and distributive impacts that need to be considered. Trade policies can make a positive contribution to poverty alleviation and food security within a properly defined global program of macroeconomic, investment, institutional, and social policies, in which differentiated approaches and instruments are targeted to the households and individuals that suffer from poverty and food insecurity. Usually, trade policies aimed at a specific food product, even if labelled “special,” “food security staple,” or any other name suggesting the need for special consideration, do not necessarily represent the more effective, efficient, or even equitable, way of addressing poverty and food security problems of affected households.

HIGH FOOD PRICES AND FOOD SECURITY

One of the key current questions is whether the world has moved from a scenario of low food prices in the 1980s and the 1990s to another of high food prices, now and in the foreseeable future. If so, this would be a crucial difference from the negotiations during the Uruguay Round and the starting of the Doha Round. To evaluate this claim, we need to consider several points.

First, it should be noted that nominal prices of commodities are correlated with the US dollar—when that currency strengthens vis-à-vis other currencies, the dollar price of commodities declines, and vice-versa (Mundell 2002). Figure

3 | The sign * means multiplication. Obviously, taxes enter with a negative sign.

4 | Of course, the opposite may also happen—farmers shielded by high protection may not need to incur additional costs and investments to attain the desired levels of profits; therefore, protection, in this scenario, may lead to less investments and productivity.

3 shows the inverse relationship between the US dollar and the nominal index of food products.⁵

An implication is that if the value of food in nominal terms is measured in a basket of currencies, such as the Special Drawing Rights issued by the International Monetary Fund (IMF), the recent price increase looks clearly lower than in US dollars: in fact, the current spike in nominal SDRs is not that much higher than in the 1970s and the 1980s (Figure 4).⁶

Second, the current price spike does not look as high or sustained as in the 1970s if the data is presented in real terms (that is, adjusted for the loss of purchasing power due to inflation during the last decades) (Figure 5).⁷

A third point to note is that when world food and agricultural prices go up, usually prices of other commodities go up as well (Díaz-Bonilla 2010). Therefore, one must look at the evolution of the terms of trade (TOT) in general rather than focus only on individual commodities, such as food. TOTs combine commodity prices with other goods and services, as exports and imports. Figure 6 shows the median of the net barter TOT for a sample of countries in these regions—Latin

American Countries (LAC); Middle East and North Africa (MENA); Sub-Saharan Africa (SSA); and Asia for the period 1980 to 2011.⁸

The influence of the decline in commodity prices in the 1980s is clear in the median TOT of LAC, followed by MENA

- 5 | The nominal food index is from the data base IMF/IFS. The US exchange rate is the index for major currencies in nominal terms calculated by the Federal Reserve, http://www.federalreserve.gov/releases/h10/summary/indexn_m.htm.
- 6 | The nominal food index is from the IMF/IFS as before, as well as the conversion between SDRs and US dollars.
- 7 | The IMF/IFS nominal food index is deflated by the unit export value of the "advanced economies" also from the IMF/IFS database. Another deflator frequently used is the consumer price index (CPI) of the US. Using this deflator would not change the main trends.
- 8 | Terms of trade are defined as the price of exports divided by the price of imports, calculated from national accounts, using the World Development Indicators database of the World Bank. The figure shows the median values for 36 SSA, 17 LAC, six MENA, and 12 Asian countries, which had complete data for the period 1980–2011.

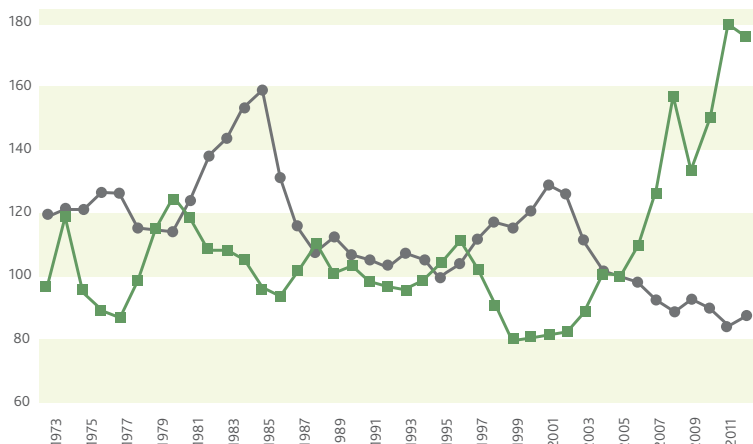


FIGURE 3:
US Nominal Exchange Rate and Nominal Food Index
2005=100

LEGEND:
 ● Food Index IMF
 ■ US Exchange Rate

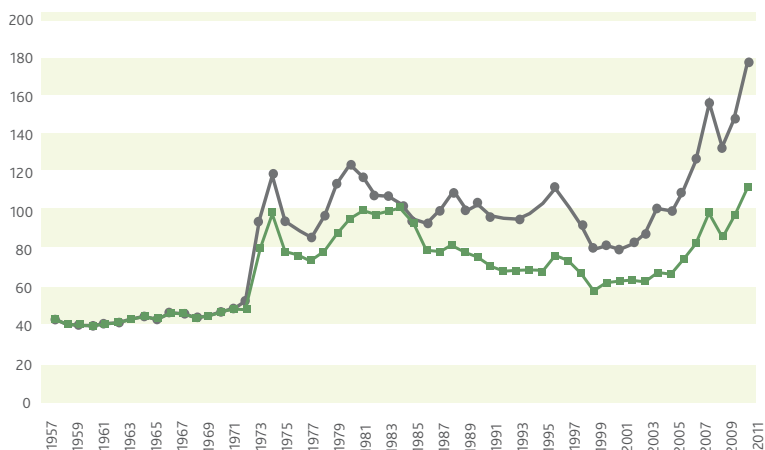


FIGURE 4:
Nominal Food Index in US dollars and SDRs

LEGEND:
 ● Food Index Nominal (US dollars)
 ■ Food Index Nominal (SDRs)

and SSA. Asia's TOT were more stable during the 1980s and the 1990s. The recovery in commodity prices after the lows that coincided with the recession of the early 2000s is reflected more in the increases in the TOT of SSA and MENA, and less in those of LAC. The TOT in Asia appear to have been affected negatively by recent increases in commodity prices, which is in line with Asia as a region being a net importer of commodities and an exporter of manufactured goods. On the other extreme, MENA and SSA are producers of commodities with a larger percentage of metals and oil in their basket of exports. LAC is in an intermediate position, with more agricultural products than SSA and fewer manufactured goods than Asia.

Moving now to future prices, Figure 7 shows historical values and projections of prices for wheat and coarse grains by the OECD/FAO (2013) deflated by the export unit value of advanced economies.⁹ The projections suggest a horizon of real prices that are lower than in the 1970s, but higher than in the 1980s and the 1990s, although with no further increases.

However, there are substantial uncertainties regarding supply and demand issues, including world growth, the impact of aging, consumption patterns, technology developments, and climate change (Díaz-Bonilla et al. 2013).

In short, real food prices are higher than in the 1980s and the 1990s, but not as high as in the 1970s, and they are projected to stay flat at the new plateau. Other things being equal, this should provide better incentives for agricultural and food production if the higher prices are allowed to be passed on to farmers without the need for trade-distorting interventions.

9 Historical and projected prices come from the OECD/FAO commodity database. The export unit value of advanced economies is from the IMF/IFS database until 2012; projections from 2013 are based on the IMF/WEO database using the inflation of manufactured exports of advanced economies.

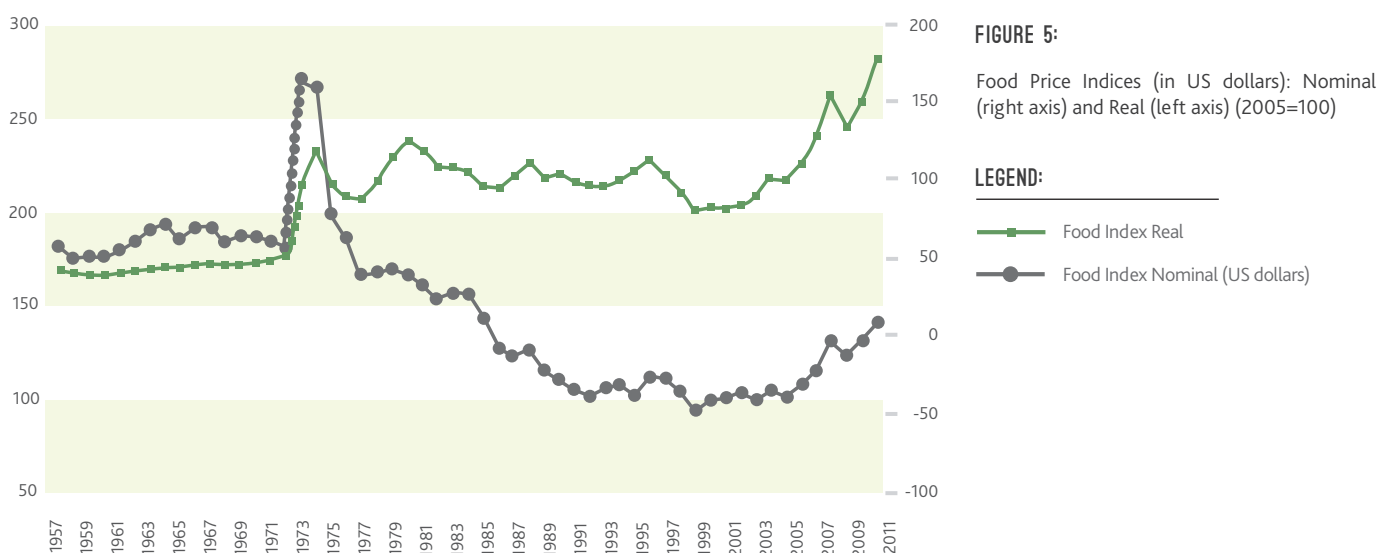


FIGURE 5:
Food Price Indices (in US dollars): Nominal (right axis) and Real (left axis) (2005=100)

LEGEND:
■ Food Index Real
● Food Index Nominal (US dollars)

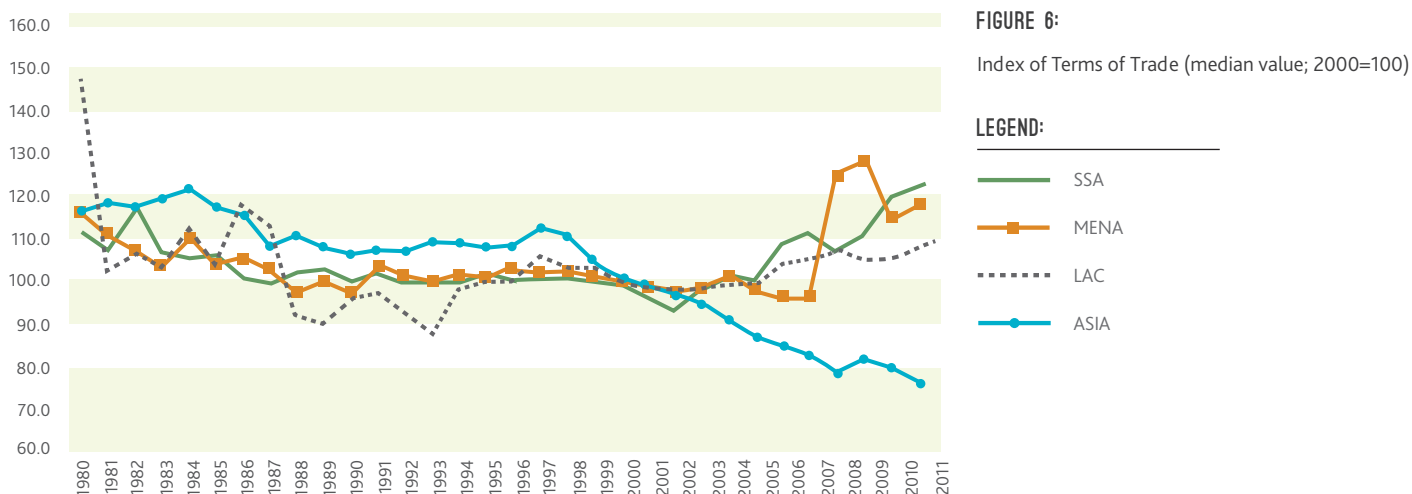


FIGURE 6:
Index of Terms of Trade (median value; 2000=100)

LEGEND:
— SSA
—■— MENA
- - - LAC
—●— ASIA

The implication of this new scenario is that while previous agricultural trade negotiations, conducted in a context of lower global prices, focused on policies that artificially expanded supply in some countries, or reduced demand in other countries through protection, now there is a larger interest in policies that may artificially restrict supply to other countries or expand demand in some countries. The previous trade concerns focused on producers, while now there seems to be more thought given to consumers. However, trade policy instruments and approaches to the negotiations do not seem to have changed much, with many voices again suggesting higher levels of protection and inefficient and inequitable subsidies as a solution to high prices much as when prices were lower.

HIGH FOOD PRICES AND ENERGY ISSUES

Commodity prices tend to move together, particularly food and energy products (Díaz-Bonilla 2010). Till now, the links between agriculture and energy were considered in terms of production, processing, transportation, storage, and cooking costs. High prices of energy affect agricultural production and prices through those channels (Díaz-Bonilla 2013).

Recently, another channel has been added with the use of agricultural products as raw material for the production of biofuels. This link has been singled out as one of the factors behind the recent price spikes—the way policies were designed and implemented, mainly in the United States (US) and the European Union (EU) (both large producers and consumers of biofuels), led to a significant and sudden increase in demand for corn and oilseeds in the mid-2000s, which, combined with low stocks-to-consumption ratios, negative weather shocks, reactive policies by exporting and importing countries, a weakening of the dollar and, perhaps, some other monetary, financial, and speculative developments, generated the price spikes of the latter part of the 2000s (Heady and Fan 2010, Torero 2012, Wright 2011).

Figure 8 shows the increase in biofuel production at the world level and in the three main countries/regions (the US, Brazil and the EU, which together represented about 84 percent of world biofuel production in 2012) in tons of oil-equivalent.¹⁰

The accelerated increase in biofuel production in the last few years has been driven by policy changes, mainly quantitative mandates in the US and EU, and by an increase in oil prices that have made biofuel production more competitive (OECD/FAO Agricultural Outlook 2011, 2012, 2013; Schnepf 2013; Laborde and Msangi 2012).

That increase in production has required expanded use of corn, oilseeds, and other crops that were mainly used for food and feed. Figure 9 (with data from FAPRI) shows the change in trend utilization for corn as raw material for ethanol in the US after the Energy Policy Act of 2005 changed the new minimum-usage mandate (the Renewable Fuels Standard or RFS1), which was reinforced by the remarkable expansion under the Energy Independence and Security Act of 2007 (RFS2).

Those mandates, along with the impact in August and September 2005 of Hurricanes Katrina and Rita and then-low corn prices, created unique profit opportunities for the production of corn-based ethanol, which expanded significantly (Schnepf 2013).

Wright (2011) puts the US impact in stark context by noting that in 2011, when use of corn for biofuels represented about 30 percent of US output of that crop, diversion from food to fuel was “greater in calories than the entire increase in global calories available from wheat or rice since 2002.”

10 From BP database; <http://www.bp.com/en/global/corporate/about-bp/statistical-review-of-world-energy-2013/statistical-review-downloads.html>.

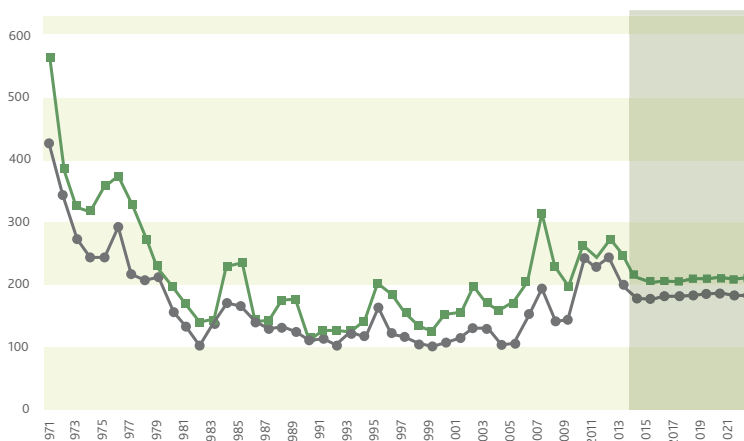


FIGURE 7:

Real Prices of Wheat and Coarse Grains Historical (until 2012) and Projected (2013 and forward) (Deflated by EUV with 2005=100)

LEGEND:

- Wheat
- Coarse grains

OECD-FAO (2013) estimates that by 2022 global ethanol (mainly from coarse grains and sugar) and biodiesel production (mainly from oilseeds), will require 12 percent of the world's coarse grains, 29 percent of sugar cane, and 15 percent of vegetable oil production under current policies. Simulations by IFPRI (Rosegrant et al. 2013; Al-Riffai et al. 2010) suggest that biofuel policies, if maintained, will mean higher prices for food products in the next decades.

Therefore, there are two (related but different) impacts of biofuels to consider—one is the price spike, and the other is the new higher plateau (or trend). The energy-biofuel-food channel has important implications for food security, among other things, because the energy market is far larger than the food market, and events in the former tend to dominate developments in the latter. This can be seen by converting all non-food and food energy into a common measure, such as joules. The first is the energy needed for the operation of the world, except human beings, and food energy is the one required for human beings to function. Estimates for 2006 (Diaz-Bonilla and Robinson 2010) consider that food energy amounted to about 28 exajoules and non-food energy, some 460 exajoules, for a population of about 6,400 million people. In other words, the market for non-food energy was about 16 times larger than the market for food energy, suggesting that demands from the first market may dominate and determine what happens in food markets. Projections only increase the disparity—for instance, towards 2050 and with a population of about 9,000–10,000 million people, food energy consumption may reach about 39–43 exajoules, while non-food energy consumption can go up to 800–900 exajoules, or the non-food energy market will be 21 times bigger than the food energy market.

There are two different aspects to consider in this channel—one is biofuel policies, and the other is the evolution of energy prices. Even if policies become less supportive of biofuels (therefore, less distorting of food markets), very high energy prices may still provide enough incentives for further expansion of biofuel production. Therefore, for the

food-versus-fuel debate it is necessary to look at both issues (biofuel policies and projections of energy prices).

Starting with energy prices, while real prices of agricultural commodities are lower now in real terms than in the 1960s and the 1970s, other energy commodities, particularly oil, currently have the highest real prices of the last 50 years (Figure 10).

The history of oil prices during the last half century shows that only in two periods, during the late 1970s and the early 1980s, and now in the 2000s, did the real world price stay for several years on average at or above US\$ 70/barrel, with peaks over US\$ 90/barrel in 1980, 2007 and 2011.¹¹ The strong global growth cycle during the 1960s and the 1970s led to commodity price spikes in the mid-1970s, but it was then followed by a collapse in oil prices due to the 1980s global recession, the debt crises in developing countries, and technological innovations that led to the development of deep sea oil extraction in the North Sea, which weakened the Organization of the Petroleum Exporting Countries' (OPEC) price setting. In the agricultural sector, changes in trade policies in industrialized countries and the recessionary global macroeconomic conditions also led to the collapse of the prices of agricultural goods in the second part of the 1980s. In that context, the continuous advance of the green revolution was supported by lower oil prices, which helped to keep fertilizer prices and energy costs, in general, under control.

In the shorter term, the question is whether the world is going to experience a scenario similar to the 1980s and the 1990s in which technological developments in energy (such as those related now to shale gas and unconventional oil) and depressed global economic conditions lead to a decline in energy (and agricultural) prices, or whether the world

¹¹ Here the focus is on oil because of its larger share in energy sources, the multiple uses in transportation, electricity, and manufacturing, and as the reference for the pricing of other sources of energy.

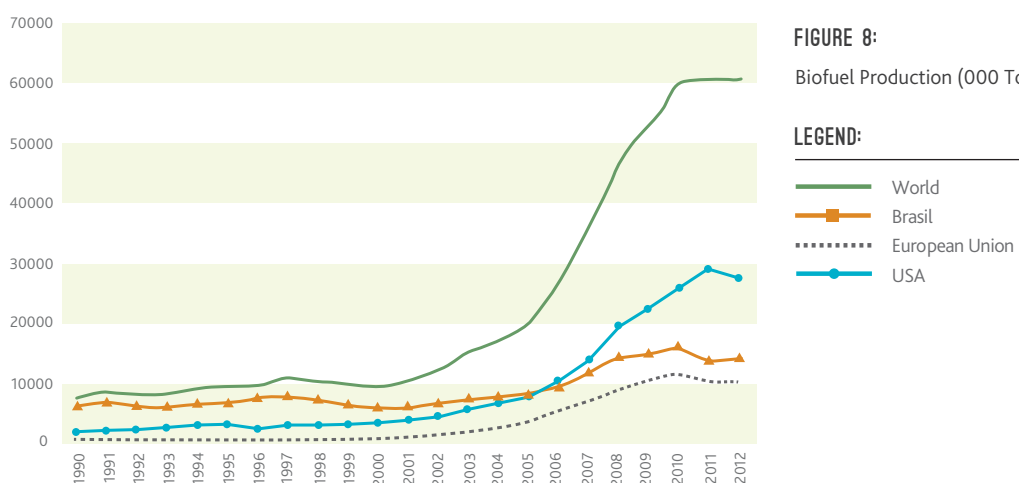


FIGURE 8:
Biofuel Production (000 Tonnes of Oil Equivalent)

LEGEND:
 — World
 —■— Brazil
 - - - European Union
 —●— USA

is moving to a scenario of sustained real energy prices at levels not yet experienced in history. The answer has serious implications for agricultural production, food security and poverty, management of natural resources, and climate change developments. In particular, high energy prices underpin the strong growth projected for biofuel production in the next decades, which raises questions about the food-versus-feed use of resources, highlighting the need to move to non-food raw material for the production of biofuels.

Notwithstanding the projections in Figure 10, if the most likely scenario is one with softer energy prices due to technological change and less buoyant world growth than several forecasts suggest, then large increases in biofuel production will mostly depend on public policies.

Current biofuel policies are based on objectives such as energy independence, reduction of greenhouse gas (GHG) emissions, and support for agricultural and rural development. But they have been criticised of late for contributing to high food prices, the significant cost to

taxpayers and consumers of mandates and subsidies, the limited contribution to the reduction of GHGs (which may be even negative in some instances if indirect land use change [ILUC] is considered), and the limited contribution to energy independence under the current technological scenarios (Schnepf 2013; Laborde and Msangi 2011).

Apart from whether the policy objectives are being attained, there are also problems of policy design. Since biofuel policies tend to be based on rigid mandates that escalate annually, those policies contribute to making demand for some food crops inelastic, exacerbating price volatility in the face of supply shocks. The complexity of the mandates generates significant market uncertainties and the possibility of two-way international trade without economic rationale in the absence of policy mandates (OECD-FAO 2012 and 2013). For instance, the nested structure of the mandates in the case of the US; the possibility of waivers from the Environmental Protection Agency (EPA, the implementing US agency) if some sub-mandates, such as the cellulosic mandate, cannot be met because of objective production

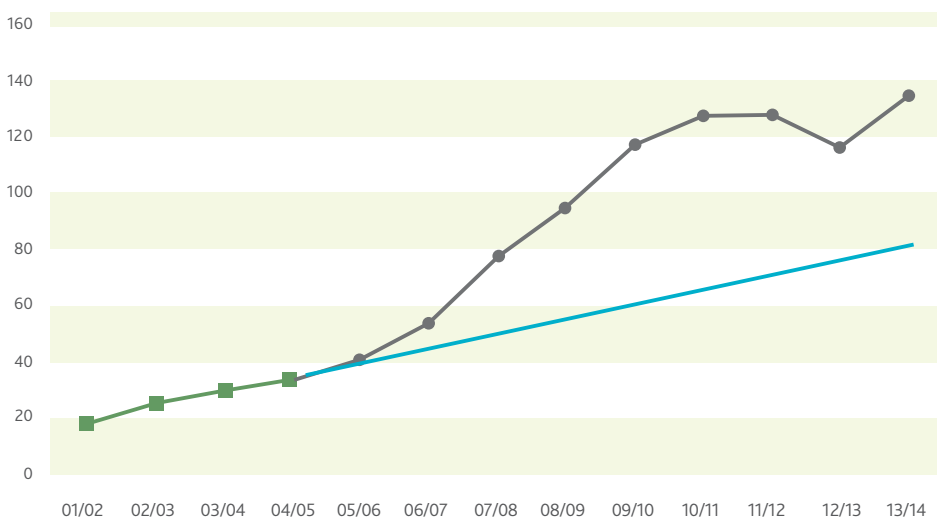


FIGURE 9:
Corn Utilized in Ethanol Production in the US (million tons)
LEGEND:
— Linear (MT of corn for ethanol trend 2001/04)
—●— MT of corn for ethanol production
—■— MT of corn for ethanol trend 2001/04

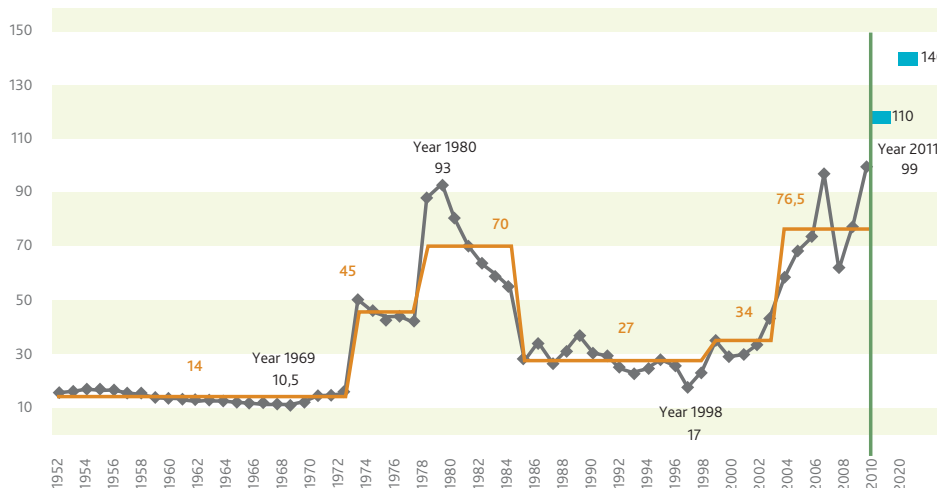


FIGURE 10:
Average World Oil Price (2009 US constant dollars per barrel)
LEGEND:
—●— Petroleum: average crude price
— Average per periods
—■— IEA Projections Current Policies

constraints; and the very different options the EPA may utilize to define the annual regulations imply significantly dissimilar impacts on production and trade, not only in the US but globally.¹² Also, there are regulatory uncertainties about how the EPA may deal with the issue of the “wall blend” (that at a 10 percent ethanol mix, total demand for biofuels, given the type of cars operating in the US, has a physical limit) and how the EU will treat the issue of GHGs linked to ILUC. What are the implications of these developments for trade and the WTO? One aspect is the emergence of trade disputes related to biofuels—from complaints about the high ethanol tariffs in the US (now reduced) to the current anti-dumping procedures by the EU on biofuel exports from the US, Malaysia, Indonesia, and Argentina, among others.

The global trading system and food security would benefit by at least freezing mandates at the current levels, making them more flexible and less complex, and opening up trade in biofuels (FAO et al. 2011). The whole topic would require a careful review within the WTO, considering the implications not only for the AoA (including issues of distorting and Green Box domestic support), but also for other WTO legal texts such as the Agreements on Subsidies and Countervailing Measures and Technical Barriers to Trade.

PRICE SPIKES, CLIMATE CHANGE, AND FOOD SECURITY

Another link between energy, and agriculture and food production, is the one of climate change. The high-energy intensification of world agriculture starting with the green revolution, which allowed a significant increase in global availability of calories and proteins per capita with a relatively small expansion in land use, may not be possible in future, because of the potential impact of higher costs of energy and the significant levels of GHG emissions implied in such an approach.

Long-term data shows increasing flow emissions of GHGs over the last centuries, larger concentration of those gases in the atmosphere, and rising temperatures. The direct impact on agriculture comes mainly from changes in the mean and variability of temperature, precipitation, and availability of daylight shaping the length and quality of the growing season and water availability; the effect of CO₂ fertilization; the evolution of plagues and pests linked to climate change, and changes in sea levels, among other factors (Gornall et al. 2010).¹³

Those impacts of climate change on agricultural production are highly differentiated by regions and crops. The determination of tolerance and resistance thresholds for specific crops is a complex undertaking given the non-linear relations between the different variables. Further, in climate change simulations, different General Circulation Models

(GCM) offer diverse projections of what climate outcomes may result from the same levels of accumulation of GHGs and aerosols in the atmosphere.

For instance, projections by IFPRI (Nelson et al. 2010) consider two different scenarios for climate change: one based on a model developed by Australia’s Commonwealth Scientific and Industrial Research Organisation (CSIRO) (which tends to project a drier world with lower increases in temperature), and the other using the Model for Interdisciplinary Research on Climate (MIROC), implemented by the University of Tokyo’s Center for Climate System Research (which suggests greater increases in precipitation and a hotter world on average).¹⁴ It must also be noted that the uncertainties about the path of GHG emissions and the impact on climate may not be solved by the Fifth Assessment of the IPCC currently being conducted, considering that the more sophisticated GCMs utilized in this Assessment are likely to expand, rather than narrow, the range of potential climate change outcomes (Maslin and Austin 2012).

Whatever the uncertainties about the evolution of GHG emissions, and of the overall and geographical medium- and long-term impact on agriculture and food production, it is important to consider the probability that the world may be on its way to surpassing the projected 2°C rise in temperature during the next decades, which will affect agricultural and food production, and will require sustained R&D investments in adaptation and mitigation.

All of this has implications for the AoA, particularly with regard to domestic support measures, as discussed in Blandford 2013. In the shorter term, one of the aspects of more immediate importance for agriculture is increased volatility around the long-term trend (Jarvis 2012). The warming of the atmosphere seems to have already increased the frequency of extreme events at the world level as well (Hansen et al. 2012). This greater volatility with more frequent extreme events, such as droughts and floods, may be the most important effect of climate change to consider currently for food security, taking into account that potentially negative consequences for yields due to increases

12 The US biofuel policy has an overall mandate, and within it, in a nested fashion, an advanced biofuel mandate, which, in turn, includes, with some room for other alternatives, a bio-based diesel mandate and a cellulosic mandate. The latter has been difficult to meet because of the slower development of viable technologies. Therefore, the EPA has been granting waivers to that mandate, but this implies three options for the rest of the mandates—first, it may reduce all the nested mandates by the same amount; second, the opposite would be to maintain both the overall and the advanced mandates; and third, it may maintain the overall mandate but reduce the advanced one. The implications for US production and trade are very different (OECD-FAO 2012).

13 Variability includes extreme events such as droughts, floods, hurricanes, and the like.

14 They report some results from two other GCMs, but the main simulations are based on CSIRO and MIROC.

in average temperature (the long-term trend) are projected to take place over several decades.¹⁵

If that is the case, then Green Box measures such as those related to food security stocks (AoA, Annex 2, paragraph 1) and domestic food subsidies (AoA, Annex 2, paragraph 4) may be more relevant topics to be discussed in the current context than in the past. (This is discussed below; see also Murphy 2010.)

IS FOOD SECURITY A NEW TRADE CONCERN?

The recent price spikes, although not as pronounced as in the 1970s, have nonetheless renewed food security as a trade concern. Within the WTO, this is exemplified by the current discussions at the Committee on Agriculture and some of the proposals, such as the G33 suggestion for changes in the treatment of food security stocks (WTO 2013).

Food security, however, is not a new trade concern. During the Uruguay Round the issue was reflected in the Marrakesh Declaration and the establishment of the NFIDC category. Also, several developed countries claimed food security concerns during those negotiations to justify barriers to food imports and higher levels of domestic support.

More recently, during the Doha negotiations, the concept appeared in the request by several developing countries for a Food Security Box, with more options to maintain high levels of protection (the proposal evolved eventually into the Special Safeguard Mechanism, SSM). However, simulations on a potential SSM showed that if that protection was sustained over time, developing countries using that safeguard would have been worse off in terms of food security and other dimensions as well, such as employment, production, and exports. On the other hand, using the money from the implicit tax on food protection of increased tariffs (which was privately collected, mostly by larger producers) to support R&D in agriculture would have improved food security, production, and employment in those countries (Diaz-Bonilla, Diao and Robinson 2004).¹⁶

Developed countries included food security concerns in the notion of multi-functionality again to justify barriers to food imports and higher levels of domestic support. However, no developed country fits the profile of food insecure according to objective indicators of food consumption, production and exports (Diaz-Bonilla, Thomas, Robinson and Cattaneo 2000). Also, if developed countries expand agriculture on account of multi-functionality using protection and domestic support, other countries' agriculture and their multi-functionality would suffer (Diaz-Bonilla and Tin 2006). Therefore, use of food security and multi-functionality by developed countries as the foundation for protection and subsidization of agriculture appears suspect.

While food security issues are not new in trade negotiations, what has changed, as argued in the previous section, is that earlier it was postulated in a context of low food prices and concerns about how those prices were affecting producers, while now it has reappeared against a background of high prices and volatility. Current food security fears centre on the potential impact on consumers.

Whatever the contextual novelty, some of the policies advocated seem very similar to the past, considering that in many countries the concern about high prices and volatility has led again to concepts of "self-sufficiency" using import barriers and distorting domestic support, much as when food security concerns were postulated to help producers affected by low prices. In this line of thinking, trade is uncertain and would not suffice to insure against volatility and price spikes; what is needed, in this view, is to expand productive capacity to reach some level of "self-sufficiency" and depend less on external sources.

However, import barriers and distorting domestic support to expand production may be a sub-optimal and potentially costly way to try to insure against price volatility (Minot 2011, 2012). Also, if import barriers are utilized, domestic prices will be kept at higher levels, which would affect the food security of the poor and the vulnerable. If distorting domestic support is implemented, it will have fiscal impacts, and other sectors in that country may have to contract to accommodate the larger use of resources by the artificially expanded agricultural sector (assuming that, as it is usually the case, there is at least some part of those resources currently employed in non-agricultural productive activities that will move to agricultural production due to the distorting policies. Since domestic production tends to be, for most countries, more volatile than global production, self-sufficiency may increase volatility (section 2.2).

A more appropriate way to expand agricultural productive capacity and make it less volatile (all of which is needed in many developing countries) is mainly through measures that increase productivity, such as infrastructure, agricultural R&D, and similar investments that are allowed under the Green Box of the AoA.

¹⁵ Also if CO₂ fertilization effects materialize, the impact of climate change may be lower or even positive for some crops and regions. On the other hand, most of the calculations do not consider the potential impact of spreading pests and plagues, and of sea-level increases due to climate change, all of which would have negative effects on agricultural production in many developing countries.

¹⁶ So far the negotiations on the SSM do not seem to have achieved the needed balance not only between importers and exporters, but also, more crucially, for food security between small farmers and poor consumers. At the technical level there are still many unresolved operational issues, and there are different opinions of what would be the real incidence of the SSM considering the specific operational variables in the Draft Modalities and that developing countries having access to the current Special Agricultural Safeguard (SSG) have not invoked it very often when compared to industrialized countries.

WTO DISCIPLINES AND FOOD SECURITY

Given the new context discussed so far, a relevant question is whether WTO disciplines, in general, and special and differential treatment (SDT) linked to different categories of countries, in particular, are adequate to address food security concerns. More specifically,

- Does the WTO framework force/allow industrialized countries to follow “good” policies that help with global poverty reduction and food security and to avoid “bad” ones?
- Does it force/allow developing countries to do the same?

The first question is related to whether allowed trade policies for industrialized countries displace agricultural and food production in developing countries, denying employment and production opportunities that may help reduce poverty in the latter countries, or whether they help global consumers with expanded supply of cheap food. This paper focuses on policy issues for developing countries and, therefore, developed countries' policies will not be discussed (see Díaz-Bonilla et al. 2003; Diaz-Bonilla and Ron 2011 for some aspects of that debate).

The second question is whether WTO disciplines allow enough “policy space” for developing countries. The discussion of what interventions should be allowed in this policy space as “good policies” to confront food security concerns revolves around an apparent policy dilemma—what contributes more to generating food security, high prices for producers or low prices for consumers?

Those that say that poor producers prefer high prices, arguing that the multiplier effect of agriculture has important benefits for employment and poverty alleviation, and tend to gravitate towards protection and price support. Those that take the perspective of poor consumers emphasize the importance of low prices, considering the impact on urban and rural poverty and malnutrition. They suggest lower levels of protection and the use of consumption subsidies.

However, the most effective way out of this policy dilemma is through interventions that increase production efficiency and reduce costs (mostly agricultural R&D, infrastructure, and related investments allowed in the Green Box), all of which increase profits for producers, while contributing to expand supply and reduce prices for consumers. The case of poor and vulnerable populations can be addressed through properly designed and funded safety nets and cash transfer programs.

In any case, the AoA allows a variety of policy interventions, not all of which may offer the best alternative to deal with the high price/low price policy dilemma in an efficient and equitable way. The list includes the following, among others.

- Green Box (Annex 2 of AoA): food security stocks (paragraph 3), domestic food subsidies (paragraph 4), and other Green Box measures.
- *De minimis* 10%.
- Article 6.2 on investment and input subsidies for low-income or resource-poor (LIRP) producers.
- Countervailing duties to subsidized exports.
- The possibility of using the difference between bound and applied tariffs.

The ‘Revised Draft Modalities for Agriculture’ circulated on 6 December 2008, with additional annexes, by the then chairperson of agriculture negotiations at the WTO (TN/AG/W/4/Rev.4) (from now on “Modalities”) included further policy space.

Under the expanded Green Box of the Modalities there are more flexibilities for establishing stockholdings, supporting low-income producers, implementing insurance programs for natural disasters, and offering regional payments (Díaz-Bonilla and Ron 2011).

The Modalities include additional options to manage import protection, such as Special Products (Annex F, List of Criteria), the Special Safeguard Mechanism, and Sensitive Products. There is the need for instruments to protect from import surges and unfair trade practices, especially to avoid drastic shocks that affect survival strategies of the poor; but, at the same time, it must also be remembered that poverty and hunger materialize at the household/individual level, and protection for crops does not focus on the main problem. In fact, while predicated as a way to help small farmers, protectionist measures that increase the domestic price of crops benefit mostly large producers, and penalize poor consumers.

The Modalities also establish stricter disciplines on food aid (Annex L), and creates a new category of SVCs (which only half appear food insecure under some metrics of food security; see below).

For many of the existing instruments in the AoA and the expansion considered in the Modalities, the main issue does not seem to be the lack of policy space for developing countries, but the availability of fiscal resources to implement the allowed alternatives, and the adequate design of those interventions. For example, the design of adequate food stocks for food stability and domestic food aid tends to be affected by the same high/low price dilemma, and the operational problems and costs involved are probably more important than the issue of policy space for developing countries (more on this below).

The other problem is more general, and combines at least three different topics. First, the nature of the WTO as an

institution to manage trade disputes and/or the perception of also being a “development” institution. Second, the advances by developing countries during the last decades in agricultural production and trade, accompanied by increases in support for agriculture in those countries, as well as important gains in total GDP and incomes. And third, the definition of the categories of countries under the WTO.

The first two issues are briefly discussed here. The topic of categories under the WTO is analysed in the next section. Some analysts (such as Christian Häberli of the University of Berne)¹⁷ have argued that the main point of the WTO is to develop a framework that avoids or limits trade disputes: that is, how to ensure that trade policies of country A do not hurt country B. In this view, the issue of designing and implementing trade policies for developmental purposes is something different from the basic mandate of avoiding trade frictions that may affect specific countries. Of course, the trade policies of country A may be affecting country B in such a way as to hinder development (in which case disciplining country A's trade policies would contribute to development); also, if the trade system functions smoothly without trade disputes, then that would support world growth and development in general. In those examples, avoiding trade frictions and developmental objectives complement each other. But that may not always be the case, and it is useful to keep both aspects conceptually separate.

The Doha Round has been labelled a “development round” and that has led to expectations and requests by developing countries for more “policy space” (usually predicated on food security concerns) to further such development. Industrialized countries (and some emerging countries that are important agricultural exporters), however, are of the opinion that enough policy space exists and that further expansions may begin to affect their trade interests. In turn, economists fret about the potentially negative impacts in terms of efficiency and equity of several of the policies allowed for developing countries under the AoA and further expanded in the Modalities, and sometimes view the WTO as the enforcer of what they consider “good policies.” Trade negotiators see their job as expanding their own “policy space” to make sure that her/his country will not have to answer to WTO panels for alleged violations, while trying to limit the policy space of others. Finally, civil society groups add to the complexity with a large variety of views about development, the environment, human rights, and the like.

All these perspectives configure a complex agenda that requires to be clarified. Those conceptual issues are further complicated by a second, factual point—the clear advances of developing countries in the world economy. Figure 11 shows the percentage of world agricultural production of two groups of countries.¹⁸ The first is the sum of Canada, the US, the EU-27, Australia, New Zealand, and Japan (the “developed regions”); and the second group includes Asia (minus Japan), all of Africa, and Latin America and the Caribbean (the “developing regions”).

While in the early 1960s both groups represented about the same share of world production, in 2011 the ratio was somewhat more than 70 percent for the developing regions against almost 25 percent for the developed regions (the balance is represented by other non-EU countries in Europe, countries of the former Soviet Union, and by smaller countries in Oceania). The increase in developing countries (almost 29 percentage points) is mostly explained by the expansion of Asia (23 percentage points) (of which China represents about 14.6 and India almost 2 percentage points). LAC increased by 3.5 percentage points and Africa by 1.2 percentage points. As a whole (and although there is a limited number of exceptions in the case of individual countries), in all developing regions agricultural production and availability of calories and proteins in per capita terms have increased since the 1960s (last data is for 2010–11).

If we look at trade data for the same groups, the numbers also show increases in global share, although less dramatic: according to FAOSTAT, the group of developing regions mentioned above increased its agricultural exports from about 27 percent of world exports in the early 1990s (in current US dollars) to 37.5 percent in 2010.¹⁹

Another point to be noted is the advance in the measure of support to agriculture in developing countries, at least as calculated by the nominal rate of assistance (NRA) estimated in a recent World Bank exercise (Anderson and Valenzuela 2008).

The share of global GDP for developing countries, particularly when measured in purchasing power parity, has also increased significantly—according to the IMF/WEO database, the categories of advanced countries, and emerging and developing countries, moved from world shares of global GDP (at PPP values) from 69 percent and 31 percent in 1980 to 49 percent and 51 percent, respectively, in 2013. In 2013, for the first time in modern history, emerging and developing countries represented a larger share of global GDP than advanced economies (using the categories of the IMF, which are somewhat different from those in Figure 11). Those increases in GDP and incomes, among other things, have allowed the expansion of agricultural support.

The consequence of all these facts and conceptual issues is at least two very different narratives that, if they do not

17 | This is from a personal communication. I hope I am not mischaracterizing his views. See also Häberli 2013.

18 | Data is from FAOSTAT. Agricultural production is measured in constant international dollars (that corrects for purchasing power differences, and therefore allows for aggregation and comparisons) using 2004–06 as the base period.

19 | From the 1960s to the early 1990s there was a decline in share for the developing regions discussed here, mostly because of the sharp decline of Africa's global export share during that period. Since then, Africa's share has stabilized at between 3 percent and 3.7 percent of global exports.

converge, will not see a resolution of world trade issues involving agriculture. Developing countries see industrialized countries that have productive advantages in land, water, climate, infrastructure, R&D, credit conditions, and the like, and ask, legitimately, why those countries should, in addition to all the natural and created advantages, need the levels of protection and distorting subsidies they are allowed under the AoA. Many developing countries see their own producers, who, as a general rule, are poorer, farm significantly smaller areas, struggle with water and climate constraints, and suffer from weak infrastructure, and lack of R&D and credit support, and conclude that there are clear imbalances in the AoA that benefit industrialized countries (a type of SDT for them) and affect poorer countries.

Industrialized countries appear to see the advances of developing countries in production and trade (while their own shares decrease), the expansion of agricultural support, the sheer number of farmers in those countries, and all the potential policy space that exists in the AoA and worry not only about current and future access to the markets of those developing countries, but also potential displacement of production in their domestic markets by some of the exporters from the largest emerging economies.

Although, in my view, the first narrative is more accurate, developing countries need to acknowledge their larger share in the world economy and in agricultural production, and the systemic effects they have as a consequence of that. They should then recognize and exercise the rights but also the responsibilities that flow from that larger presence. While many developing countries continue to argue that they are "small and poor," as a whole, they are not small anymore, and although they are not at the level of industrialized countries, some have advanced significantly in their per capita incomes. WTO negotiations, and more generally, a global governance

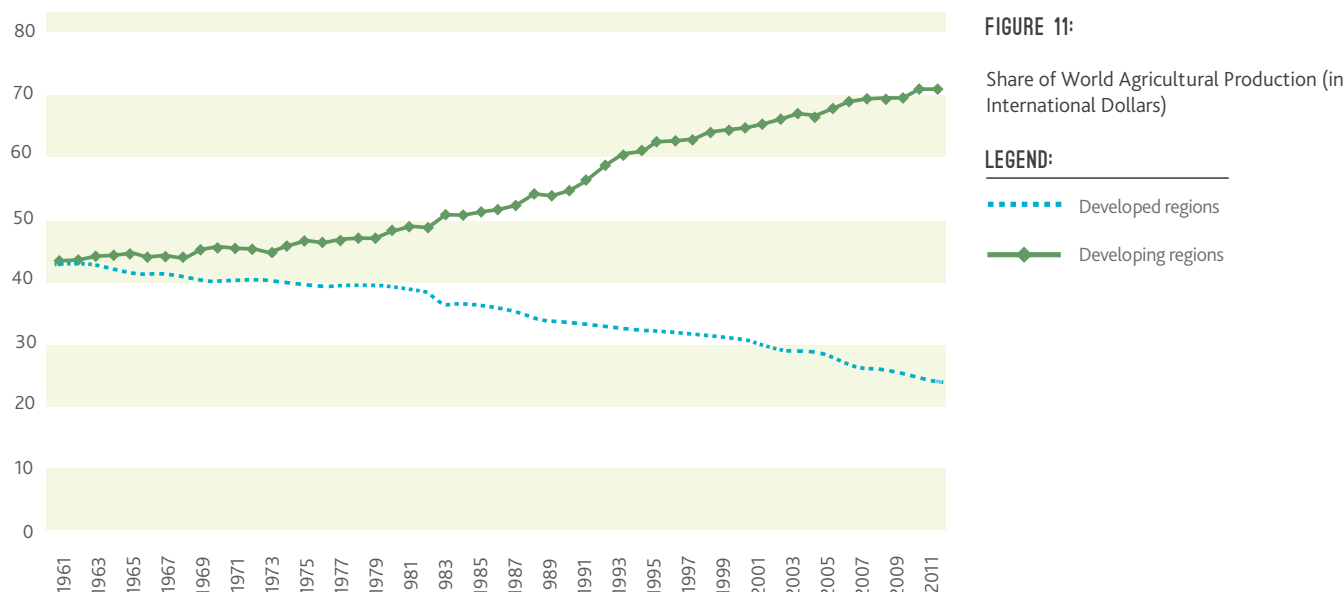
review of rights and responsibilities, need a more realistic dialogue on those issues than what seems to be taking place now.

Certainly, one of the problems is the category of "developing countries" in the WTO that includes a large variety of situations and requires a finer classification. The next section presents some reflections on that topic.

CATEGORIES OF COUNTRIES IN THE WTO AND TYPOLOGY OF FOOD SECURITY

As briefly discussed in section 4, many of the exemptions and requests for policy space, by industrialized and developing countries, seem to have been based on food security concerns. It is obvious that there are different profiles of food security across countries. Usually, the main distinction utilized is that between net food importers and net food exporters. However, a study using a cluster analysis of 167 countries (which included 155 WTO members, with 44 LDCs and 18 NFIDCs) showed a more nuanced view (Díaz-Bonilla et al. 2000).²⁰ That analysis was used to discuss whether the categories of countries under WTO rules (developing, LDCs, and NFIDCs) were adequate for analyzing food security.

20 Countries were classified into 12 categories of food (in)secure countries, applying three cluster methodologies (hierarchical, k-means, and fuzzy) to five variables—calories per day per capita; proteins per day per capita (in grams); food production per capita; total exports (merchandise and services) over food imports; and non-agricultural population over total population.



The conclusions were as follows.

- The category of LDCs was better at identifying food-insecure countries. But some of them were not counted among the LDCs and that category included some that were classified in intermediate categories of food security (called “food neutral” in Díaz-Bonilla et al. 2000).
- The category of NFIDCs was not as good an indicator of food insecurity, considering that one-third of the countries appeared in the food neutral groups.
- The category of developing countries was spread over all categories, except the top group among the most food-secure countries.
- Among food-insecure countries, profiles also differed: some were rural (mostly in Africa and South Asia) while others were urban (LAC and Eastern Europe); some were considered “consumption vulnerable” (because they showed low levels of consumption of calories and proteins per capita), while others entered food-insecure categories because they were “trade vulnerable” (manifested in the use of large percentages of their exports to buy food).
- Developed countries were all in the food-secure category, showing that food insecurity in poor countries cannot be mixed with trade concerns in developed countries claiming food security reasons.

The extension of that analysis to the new category of SVCs considered in the Modalities also showed a great variety of situations, with only 23 out of the 45 SVCs appearing in the food-insecure groups (Díaz-Bonilla and Ron 2010).

A question then is whether it is necessary, or possible, to create new categories to accommodate food security concerns in the negotiations, as well as the implications of some developing countries being “systemically important” for the world agricultural and food system.²¹

FOOD SECURITY STOCKS

Given what seems a more frequent occurrence of extreme weather events and the recent price spikes, the topic of domestic food stocks is discussed again as a general policy²² (Gilbert 2011, IATP 2012, Galtier and Vindel 2013). Regarding trade issues, food stocks were at the centre of the proposal tabled by the G33 for changes in Annex 2, paragraphs 3 and 4, as part of the topics discussed in preparation for the Ninth Ministerial in Bali in December 2013 (Chatterjee and Murphy 2013).

The G33 proposal is based on Annex B of the Modalities document, which presents amendments to sections of Annex 2 of the AoA on food security stocks and domestic food aid.

The amended language would exempt, from the obligation to count within the AMS, purchases from LIRP producers to build food security stocks or to provide domestic food aid in developing countries even if those purchases are made at “administered” prices instead of “current market prices.”

To understand the differences it is useful to start with the requirements in the current AoA, and then move to the Modalities and the G33 proposal.

First, Green Box measures (those considered in Annex 2 of the AoA) must be those that “have no, or at most minimal, trade-distorting effects or effects on production,” and include “all support policies provided through a publicly-funded government program not involving transfers from consumers” and which do “not have the effect of providing price support to producers” (Annex 2, paragraph 1). They are exempt from limits and reductions, provided they comply with other specific criteria established in that Annex (Annex 2, paragraph 1 of the AoA).²³

Paragraph 3 of Annex 2 refers to “public stockholding for food security purposes” and paragraph 4 focuses on “domestic food aid.” Both explain the additional criteria that countries must follow so expenditures (or revenue forgone) in implementing those programs are protected in the Green Box.

Regarding public food security stocks, the AoA requires that they be an integral part of a food security program identified in national legislation. It may include government aid to private storage of products as part of such a program. They must correspond to predetermined targets related solely to food security, the process of stock accumulation and disposal must be financially transparent, and the products must be bought “at current market prices, and sales from food security stocks shall be made at no less than the current domestic market price for the product and quality in question” (Annex 2, paragraph 3). A footnote in the Annex indicates that “governmental stockholding programs for food

21 For instance, the IMF has defined 25 countries as “systemically important” for monitoring and surveillance activities regarding the global financial sector. The selection is based on the size and interconnectedness of each country’s financial sector.

22 There have been debates about global and regional food stocks, which are not discussed here to the extent that WTO rules mostly apply to national food stocks (except for the sections of Article 10 of the AoA on disciplines on international food aid as part of the anti-circumvention controls on export subsidies).

23 Under specific conditions, some Green Box measures may be “actionable” under the Agreement on Subsidies and Countervailing Duties, meaning that the complaining WTO Member must support its claim proving either serious prejudice (as in Article XVI, paragraph 1, of GATT, 1994 or Articles 5 and 6 of the Subsidies Agreement), or “non-violation nullification” or “impairment of the benefits of tariff concessions” (as in Article XXIII, paragraph 1[b] of GATT 1994). Further distinctions may be needed within the Green Box measures to determine which ones will not be actionable, with particular consideration for measures taken by poor and food insecure countries.

security purposes in developing countries whose operation is transparent and conducted in accordance with officially published objective criteria or guidelines shall be considered to be in conformity with the provisions of this paragraph, including programs under which stocks of foodstuffs for food security purposes are acquired and released at administered prices, provided that the difference between the acquisition price and the external reference price is accounted for in the AMS."

Therefore, if "administered prices" are utilized, they must be compared, according to the AoA, with the fixed reference prices for 1986–88 (which, in general, are lower than current prices, even adjusting for inflation), and that the price gap must be multiplied by all "eligible production" in the country, and not only by the amount actually bought (for instance, the panel report on the dispute about Korean beef, WTO 2000). That value has to be counted within the AMS, that is, the "Amber Box" subsidies that are limited and must be reduced. Because of both these aspects (the use of 1986–88 prices and the calculation over total production), the amount calculated may be high and exceed the "de minimis" exceptions, in which case those purchases may place developing countries over their limits. The scenario outlined appears to be among the main reasons behind the G33 proposal.

Regarding domestic food aid, according to Annex 2, paragraph 4, food aid must target the population in need subject to clearly defined criteria related to nutritional objectives; food purchases by the government must be made at market prices; the financing and administration of the aid shall be transparent; food aid can be in the form of direct provision of food or the provision of means to allow eligible recipients to buy food at either market or subsidized prices. In the case of developing countries, a footnote indicates that "for the purposes of paragraphs 3 and 4 of this Annex, the provision of foodstuffs at subsidized prices with the objective of meeting food requirements of urban and rural poor in developing countries on a regular basis at reasonable prices shall be considered to be in conformity with the provisions of this paragraph."

In both cases, the AoA allows for food security interventions, but imposes some sensible requirements, such as clear national plans with well-defined criteria for food stocks or domestic aid, and transparent financial and operational procedures. As in other instances, the issue may have less to do with legal restraints under the AoA, and more to do with how to design and finance adequate interventions (Coady and Skoufias 2001 for domestic aid; and Gilbert 2011, IATP 2012, and Galtier and Vindel 2013 on good experiences in managing food stocks, mostly in some Asian countries; and bad ones, mainly in Africa).

For instance, if a country wants to build emergency food stocks (different from using stocks to provide price support to farmers or stabilize domestic food prices, which may be very expensive), it would make sense to follow the AoA and buy

at "market prices," using clearly defined targets, for instance, as a percentage of total consumption. For poor and fiscally constrained countries, buying at "market prices" reduces the costs of the food security program or domestic food aid, while using above-market administered prices would tend to generate significant losses by buying high to support farmers and selling low to subsidize consumers. If a government buys at harvest time, say, 10 percent of the production of a crop paying market prices to achieve the stock-to-consumption ratio defined for food security reasons, then that operation would give price support with respect to the counterfactual of no intervention (Islam and Thomas 1996: 58–61; Thompson and Tallard 2010 estimate, for several large developing countries, the improvements in market prices by interventions to build food security stocks). Also, it would help public finances to limit the number of key food items (no more than three to five) to be stocked. Hazell (1993) suggests that relatively small percentages of total consumption may suffice to act as an insurance mechanism. He uses McIntire (1981), who estimates that stocks of 5 percent of total consumption may be enough for SSA countries. Also, the AoA requires transparent financial arrangements, a sensible requirement to avoid waste and corruption.

Following those rules, the program should be part of the Green Box, not subject to restrictions on the AMS, and it would be financially sustainable.

The design of food stocks for stability and domestic food aid tends to be affected by the same high/low price dilemma, and the operational problems and costs involved are probably more important than the issue of policy space for developing countries within the WTO framework—if the level at which prices are stabilized is too high, it may help producers, but poor consumers, for whom not only the stability of domestic prices but also the level at which they are stabilized matters, may suffer. Then, there may be a trade-off for the poor between stability and level of prices. Here, as in other cases where food-security concerns are invoked, the focus of the policy analysis should be on people rather than on crops or food products (different evaluations of the chequered story of food stocks can be found in Hazell 1993, Knudsen and Nash 1990; new evaluations are in Galtier and Vindel 2013, who are more supportive of the use of food stocks for stabilization, and Gilbert 2011, who is more sceptical).

The proposal by the G-33 countries, as well as the Modalities, seem to consider that buying at market prices to build food security stocks and/or provide domestic food aid may be ineffective in attaining the policy objectives or impossible to do in the case of developing countries. Therefore, the suggestion focuses on exempting purchases from LIRP producers as a way of helping developing countries avoid bumping against AMS limits, given the 1986–88 reference prices and the definition of eligible production.

However, it is not clear why buying at market prices should be ineffective or impossible to do. To build food security

stocks for emergencies and to provide domestic food aid for poor consumers, governments in developing countries would be far better off financially (and would attain the objectives of food security and nutrition) if they buy at market prices (specially now in a context of high food prices) and not above them. And if the idea is to provide income support to LIRP producers (which is a separate objective from food security and nutritional support), in addition to the investment and input subsidies of Article 6, paragraph 2, developing countries can use direct payments to producers (paragraph 5 of Annex 2 of the AoA).²⁴ Those payments are easier to instrument and monitor (particularly with the extension of national identity cards and detailed records of households under conditional or unconditional cash transfer programs) than a system of public buying only from LIRP producers. Also, if the concern is poverty, providing income support to LIRP producers goes directly to the heart of the matter. If a country wants to help poor and vulnerable people, then targeting crops or livestock production is an indirect, and often inefficient and inequitable, way to reach the intended policy objectives aimed at reduction of poverty and food insecurity.

A related issue is how to make operational the concept of "low-income or resource-poor producers" in Article 6.2. A possible way of identifying farmers who would qualify for assistance under this article is to apply the usual poverty line used for international comparisons of one dollar (or two dollars) a day, or to use a relative measure of poverty within the country (for instance, producers with less than 40 percent of national income per capita) (Díaz-Bonilla et al. 2003). Now, the use of the LIRP category seems to be relatively elastic and changing over time, even for the same country (for instance, India has moved from declaring about 70 percent of producers as LIRP to more than 90 percent in recent notifications).

Another way to approach the issue, which the Committee on Agriculture has begun to explore, is to focus on other parameters such as a) changing the reference prices; b) the concept of "eligible production;" and c) the possibility of allowing some temporary period during which developing countries exceeding limits are not subject to legal challenges. The issue of reference prices may be more difficult to sort out in the short period before Bali. However, the issue of "eligible production" may not need additional negotiations if the interpretation simply follows the panel on the Korean beef case. This allowed "eligible production" to be more limited in cases when the eligibility criteria identified a specific region or, when it has a limit in the quantity purchased (although in the latter case the panel indicated that the specific operation of the scheme had to be analyzed). If purchases are limited to the product of LIRP producers, that is conceptually equivalent to the example of the region in the panel case. Even if LIRP producers are a large percentage of farmers, they would represent a far smaller proportion of all production. Otherwise, the "bona fide" interpretation of what is an LIRP producer may be in question. Another parameter that may need clarification is "current market prices," if, for example,

governments announce future purchases at prices that are market based but depend on future markets or other forward determination.

To summarize, the legal issues involved in the G33 proposal may require further consideration to make sure that developing countries are not asking, in negotiations, for something that they may not use (because it is too expensive), or that may be already available in the texts or as extensions of panel cases.

A separate topic is the question of the diplomatic wisdom of plucking the language on food stocks and domestic food aid from the Modalities, where it was "protected" as part of the whole package, and exposing the different issues involved in that formulation. For example, during the debate in the WTO Agricultural Committee, it has been pointed out that one of the two criteria under which the Green Box measures are accepted is that they should "not have the effect of providing price support to producers," while the language in the G33 proposal and the Modalities would be providing price support (if stocks are bought at administered prices above market levels).

The current debate on food security stocks and on domestic food aid is a timely and welcome development that requires a full debate of the legal, economic, and even diplomatic issues involved, a task that exceeds what can be discussed in this paper.

DISCIPLINES ON EXPORT MEASURES

The recent price spikes and restrictive trade measures by some major exporters have rekindled interest in disciplines on export restrictions. This discussion can be divided into legal issues and economic issues.

Regarding legal issues, in the AoA, export prohibitions and restrictions are considered in Article 12. According to that Article, Members that institute new export prohibition or restriction on foodstuffs (following Article XI 2(a) of GATT 1994) must "give due consideration to the effects of such prohibition or restriction on importing Members' food security" and must notify in writing, "as far in advance as practicable, to the Committee on Agriculture" explaining "the nature and the duration of such measure." The Member

24 | Article 6, paragraph 2 has the advantage, from the point of view of equity, that it encourages developing countries to design specific programs for rural development or alleviation of rural poverty instead of resorting to general and non-transparent subsidy schemes that may benefit richer farmers or be wasted in corruption. The only problem may be that those subsidies may be actionable under Article 13b. The scenario for such complaints to happen appears unlikely for most, if not all, poor developing countries. Yet, it would be advisable to clarify in greater detail the interface between Article 6.2, *de minimis* exemption (Article 6.4), and Article 13, particularly for poor countries with problems of food insecurity (see Díaz-Bonilla et al. 2003).

instituting the measure must consult, “upon request, with any other Member having a substantial interest as an importer” and must provide the latter with the requested information. These obligations do not apply to developing country Members, “unless the measure is taken by a developing country Member which is a net food exporter of the specific foodstuff concerned.”

In the Modalities, disciplines on export restrictions are further tightened. Existing export prohibitions and restrictions on foodstuffs and feeds must be eliminated by the end of the first year of implementation of a potential Doha Round agreement. New export prohibitions or restrictions cannot “normally be longer than 12 months,” and can exceed 18 months only with the agreement of the affected importing Members. The obligation to consult, however, does not apply to LDCs and NFIDCs. The Modalities document has expanded the obligations to notify, inform, and consult by defining 90 days for the notification, and strengthened the surveillance role of the Committee of Agriculture in these matters.

Moving to economic issues, the first thing to recognize is that measures taken by countries to try to reduce price volatility in their domestic markets may exacerbate price volatility in world markets by transferring outside the national markets the necessary price and quantity adjustments. More stability for some domestic markets may mean more instability for the domestic markets of other countries, given the global inter-linkages in commodity trade.

There are some studies that try to determine the impact of export measures on domestic and global variables. On export restrictions and volatility, Anderson and Martin (2011) calculated that 45 percent of the increase in rice price and 30 percent of the increase in wheat price in the 2008 price spike was due to trade measures, in general (that is, not just export restrictions). In another work (Anderson et al. 2012), calculated that import measures, represented a not trivial percentage of those increases: 45 percent in the case of rice and 37 percent in the case of wheat, which, if applied at the impacts in Anderson and Martin (2011), would make the impact of export measures on prices about 25 percent and 19 percent of the total increase in rice and wheat, respectively,²⁵ with the difference of 75–81 percent caused by import measures (such as reducing import tariffs) or other (non-trade) factors.

Gouel and Jean (2012) showed, in a theoretical model of a small country, that an optimal combination of storage and trade policies (subsidizing imports and taxing exports) stabilizes domestic food prices. The optimal policy includes export restrictions, which the authors acknowledge may be harmful to export partners, but, at the same time, they note that “to refrain from using them is costly and entails substantial transfers from consumers to producers.”

Bouët and Laborde (2010), in a global general equilibrium model, show that import and export measures have an

upward impact on world prices, and that exporters using export measures to stabilize domestic prices improve their welfare, but negatively affect net importers.

More of these studies may help to align the legal treatment with the economic impacts, considering that now there seems to be an asymmetric legal treatment of economic equivalents. For instance, the following pairs of trade actions would seem to have similar economic effects (for equivalently scaled interventions).

- Increasing export taxes or reducing import taxes.
- Reducing export subsidies or increasing import subsidies.
- Reducing production subsidies or increasing consumption subsidies.
- Using export tax differentials or import tax differentials (tariff escalation).
- Imposing an export quota or eliminating an import quota.
- An export ban or anticipatory hoarding by an importer.

Even though all those measures that try to stabilize domestic prices may lead to increases in world prices, affecting other countries (and, therefore, all being “beggar thy neighbour” policies in some sense), the discussion appears to have focused mostly on export restrictions. Non-export trade interventions have also had important effects as shown by Anderson et al. (2012).

Even if the food price spikes are trade related (for example, due to export restrictions), is WTO the right place to address those issues? A negative answer would point out that the process of notification and consultation within the Committee on Agriculture may be too slow and that the lengthy WTO dispute settlement mechanism would not be of much help during a price spike. There are strong economic incentives (Bouët and Laborde 2010) as well as political reasons for governments to “act now” to protect their citizens, and then wait to be challenged at the WTO dispute settlement mechanism later, if at all.

Positive arguments to consider stronger disciplines on export restrictions are that obligations about transparency and consultation may act as a reputational constraint, changing the cost-benefit analysis mentioned above. Perhaps it is even more important for exporters to consider that it may be necessary for them to be more flexible about accepting

²⁵ Of the total increase in the price of rice (45 percent), 55 percent was due to export measures and 45 percent to import measures. Therefore, the incidence of export measures on the price of rice was 45 percent multiplied by 0.55 = 24.75% (rounded to 25 percent in the text above). For wheat the calculation is similar—37 percent was due to import measures and 63 percent to export measures; therefore, the impact of export measures was 30% multiplied by 0.63 = 18.9% (rounded to 19 percent in the text).

disciplines on export bans and restrictions if they want to avoid the doubts about the trading system that are leading to the re-emergence of “self-sufficiency” approaches, with the potential costs of those policies on their export markets.

Whatever the WTO trade remedies are to the problem of price spikes, it seems that non-WTO options may have to be explored as well. It is crucial to have better information about stocks and to develop improved forecasting and early-warning systems of impending problems in crucial food products. Schemes to finance food imports during price spikes have also been discussed and utilized in the past. Different financial hedging approaches and global physical stocks may also help. All these trade and non-trade options merit further analysis (FAO et al. 2011).

CONCLUSIONS

This paper looked at trade and food security in the new context of higher prices, strengthened links between energy and agriculture, and disruptive climate change. It discussed in somewhat greater detail the debates about food stocks and export restrictions, and the related WTO disciplines. The current WTO framework, in Annex 2 (Green Box measures), allows the creation of food stocks and the provision of domestic food aid in conditions that let developing countries attain food security and nutritional objectives. Current AoA language requires the inclusion in the AMS of the price gap with external reference prices if the purchase is made at above-market prices, but the AoA allows selling food at subsidized prices to consumers. Changes in the WTO language to allow developing countries to buy at above-market prices would be useful only to those rare countries that may incur large public expenditures, but many other developing countries will not be able to afford that approach. For the latter, it is not wise to ask in negotiations for policy options that cannot be used. If countries do have the money and want to help LIRP producers, there are better and more direct alternatives, such as providing decoupled income support (Annex 2, paragraphs 5 and 6), or using Article 6, paragraph 2, than using the indirect and less efficient approach of buying some products at above-market prices. In negotiations, it is not wise to ask for what you can already do.

Regarding export disciplines, although there were several trade measures (and not only export constraints) that contributed to the price spike, it seems to be in the interest of importing and exporting countries (the latter to avoid the drift towards self-sufficiency) to consider tightening current disciplines. At the same time, it is important to recognize that should another spike occur, the protracted WTO process may not be an adequate constraint to governments of exporting countries that need to react immediately to complaints from their citizens about the price of food. In these emergencies, other multilateral interventions based on financial aid or physical stocks would be of great help.

While the WTO framework is mostly based on legal considerations, in the debates about food security it is always useful to carefully consider the economic issues involved. The current period of volatile prices has led to more interest in food self-sufficiency approaches. Developing countries will be well advised to invest more in expanding and stabilizing domestic agricultural production. However, the instinctive reaction of many policymakers, in the previous context of low world food prices and the new one of higher ones, has been to resort to protectionist measures, when Green Box measures linked to investments in public goods are the real basis for competitiveness and productivity.

However, some people have argued that those investments “cost money and are difficult to administer,” with the implication that protection does not cost money and it is easier to implement. In fact protectionism costs money—it operates as a privately collected, and regressive, tax on food, whose costs are paid relatively more by poor consumers (given the share of food in their expenditures) and benefits large producers relatively more (considering that protection is a mark-up received per unit produced). High tariffs and related import-restriction measures also increase prices of agricultural inputs to other sectors (primary and agro-industrial), negatively affecting production and employment there. Higher costs of wage-goods may lead to higher salaries, affecting other labour-intensive export industries. Trade protection on a large scale also tends to overvalue the real exchange rate, with negative implication for other tradable sectors. Protectionism does not seem to have positive effects over technological change, investments, and productivity.

A conclusion from reviewing WTO trade disciplines is that the AoA does not constrain “good” policies in developing countries to address poverty and food security issues (programs aimed at poor producers or consumers, stocks for food security and domestic food aid for populations in need). Developing countries can have well-defined programs for poverty, food safety and environmental protection. But the AoA does not constrain many “bad” policies either, particularly in the case of industrialized countries. The result is the two narratives discussed in the text, with developing countries trying to expand their “policy space” and limit that of industrial countries, while the latter want to maintain the (excessive) trade dispensations they got in the Uruguay Round and resist general expansions of “policy space” for developing countries, warily watching the decline in their own market shares in the face of production and trade advances by several emerging economies. These two narratives must eventually converge on a more realistic appreciation, on all sides, of the new facts and responsibilities of the global agricultural system, if improvements in the governance of global trade that are fair to all and respect the development needs of the poorer countries are to take place. That more realistic appreciation of the global landscape may also require a reconsideration of WTO trade categories.

Overall, the most important constraints to designing and implementing adequate trade and non-trade policies to help with food security continue to be financial and human resources, and institutional capabilities in developing countries. Also, it must be remembered that trade is not the main factor affecting food security, and that trade policies are blunt instruments since poverty and hunger occur at the household/individual level. Therefore, SDT defined at the national, crop, or even farmer level may not focus on the main problems. It is important to have well-targeted safety nets for the poor. But there is still a need for well-designed, temporary instruments for protection from import surges and unfair trade practices, and for avoiding drastic shocks that affect survival strategies of the poor, and worsen the welfare of poor and vulnerable countries.

The best policy approach would be a relatively neutral trade policy inserted in a general policy framework for poverty alleviation and food security, which would include, among other things, support to land ownership by small producers and landless workers; investments in human capital; investments in infrastructure and climate change adaptation and mitigation; expanded R&D in agriculture, food, climate change, and energy issues; appropriate management of natural resources; strengthened safety nets (conditional cash transfers, school lunches, women and infant nutrition programs, food-for-work); women's empowerment programs; community organization and participation; adequate functioning of product and factor markets; macroeconomic stability; and overall good governance.

Adequate trade policies and WTO disciplines can contribute to food security, but it must be recognized that they are just a component of what must be a multidimensional approach.

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INTERNATIONAL TRADE DISCIPLINES AND POLICY MEASURES TO ADDRESS CLIMATE CHANGE MITIGATION AND ADAPTATION IN AGRICULTURE

David Blandford

INTRODUCTION

An increasing concentration of greenhouse gases (GHGs) in the atmosphere is believed to be contributing to a warming phase in the earth's climate. Agriculture makes a significant contribution to GHG emissions through crop and animal production and through land clearance, particularly in comparison to its contribution to global gross domestic product (GDP), but the sector can also recycle and sequester atmospheric carbon for significant periods of time.

Projected changes in the earth's climate have major implications for global agriculture. There are likely to be efforts to mitigate emissions by the sector and to increase its contribution to the removal of carbon from the atmosphere. In addition, the sector will need to adapt to changes in temperature and rainfall patterns, and to greater climatic instability. Policy initiatives to promote mitigation and adaptation may be prompted by domestic political concerns or by international climate agreements. The use of policy instruments for agriculture in response to climate change poses challenges for the international trading system. A key issue is the extent to which mitigation or adaptation measures are consistent with existing international trade disciplines. Climate change policies could easily become a guise for protecting domestic food and agricultural sectors from international competition. There is a need to address what modifications, if any, might be made to allow countries to achieve objectives in this area while, at the same time, preventing undue restrictions on trade.

Various forms of taxes, subsidies, and regulatory measures can be used to pursue climate policies for agriculture. Additional

costs imposed on domestic producers are unlikely to be challenged through the World Trade Organization (WTO). Subsidies are likely to be more problematic, particularly if they are viewed to be output-enhancing and potentially actionable under the Agreement on Subsidies and Countervailing Measures (SCM). A number of policy measures that are promoted on the basis of environmental objectives can be an implicit form of subsidization and pose particular difficulties due to a lack of coverage under existing international disciplines. Domestic mandates for the use of bioenergy, particularly biofuels, are problematic. The promotion of the use of agricultural feedstocks for bioenergy is controversial, both in terms of its effectiveness in reducing GHG emissions, and its impact on food prices and poor consumers.

Border measures associated with climate policies, particularly environmental standards imposed on imported products, also pose challenges to international disciplines. Such measures can potentially be justified under Article XX of the General Agreement on Tariffs and Trade (GATT), particularly through the provision relating to the protection of natural resources. But unrestricted use of this exemption, even if applied in a non-discriminatory manner, could undermine existing international disciplines and compromise efforts to reduce barriers to trade.

Some degree of coupling of subsidies to production will be required to meet mitigation or adaptation objectives in agriculture. The existing requirement under the Agreement on Agriculture (AoA) that payments under environmental programmes be limited to compensating for additional costs incurred or income foregone could severely hamper achieving targeted environmental outcomes. Environmental standards for domestic and traded commodities may also be required to avoid carbon leakage. To reduce the possibilities for conflict, greater international consensus is needed on what domestic measures are appropriate in pursuing climate policy objectives and what standards can be applied internationally. Greater scrutiny of policy measures is required to ensure that these do not become a disguised vehicle for protecting domestic agricultural sectors from international competition.

Developing countries are likely to face significant challenges in adapting to climate change while, at the same time, dealing with increased demand for food and agricultural products due to population and income growth. The principle of special and differential treatment (SDT) for developing countries can be applied to facilitate the use of policies that will lead to higher productivity, but there is also a need to reduce the intensity of GHG emissions in food production, and pressures on scarce natural resources, particularly water. Greater use of subsidies that promote intensive use of energy or energy-intensive inputs, or the inefficient use of water pose problems for limiting the environmental footprint of agriculture as it seeks to meet expanding food needs. Developing countries will need access to technologies that will enable them to increase the resilience of agriculture in the face of climate change. National and international aid programmes can play a role, as can Aid for Trade initiatives.

International trade can contribute to addressing the challenges posed by climate change for the world's food system. Trade can help to provide a buffer against short-term disruptions in supplies caused by extreme weather events, such as drought or floods, which are likely to be more prevalent as global average temperature rises. Through the exploitation of comparative advantage, trade can help to achieve needed structural shifts in world agricultural output as the climate changes. While it may be difficult to reduce total GHG emissions in the face of substantial increases in the demand for food and agricultural raw materials, there is considerable scope for reducing the volume of emissions per unit of agricultural output. Freer trade can contribute to this outcome.

It will be important to avoid any adversarial positions that might cast the trade system as inhibiting the ability of countries to respond in ways that they see as sensible to promote mitigation and adaptation in the face of climate change. This is particularly critical in the use of agricultural subsidies, as the domestic politics of incorporating the sector into climate change policy could well prevail over the sensitivities of trade partners. The potential for a clash with WTO trade rules lies both in the choice of instruments and the way governments choose to implement these. There is a need to develop a broad international consensus on the issues and suitable approaches if the possibility for future conflict between climate policies and trade policies is to be reduced.

INTERNATIONAL TRADE DISCIPLINES AND POLICY MEASURES TO ADDRESS CLIMATE CHANGE MITIGATION AND ADAPTATION IN AGRICULTURE

It is now widely accepted that the world's climate is changing and that we are in a period of global warming. There have been various phases of warming and cooling even within the span of human history, and there is disagreement on how much of the current warming phase is due to human activity and the emission of GHGs. The concentration of these gases (primarily water vapour, carbon dioxide, methane, and nitrous oxide) has increased substantially since the beginning of the Industrial Revolution in Europe in the 18th century (Solomon et al. 2007).

Agriculture is unusual in that it can contribute to increasing or decreasing the concentration of atmospheric GHGs. It generates GHG emissions through crop and animal production, but can also recycle or remove carbon from the atmosphere for significant periods of time through sequestration. Agricultural production is a major source of GHG emissions, directly accounting for an estimated 10% to 12% of the global total (Wreford et al. 2010). If the clearance of uncultivated land for agriculture is taken into account, the contribution is substantially higher. The emission share may be compared to an estimated share of world GDP of around 6% (CIA 2011). Methane (CH₄)

generated by animals and rice production accounts for more than 50% of agriculture's GHG emissions (CO₂ equivalent), with the balance primarily made up of nitrous oxide (N₂O), generated by soil and land management practices. Agriculture accounts for roughly 60% of global emissions of nitrous oxide and 50% of total methane emissions. The food and agricultural industry is a major user of energy in the production of inputs, the processing of commodities, and the use of transportation. These activities also generate significant GHG emissions.

It is increasingly recognised that climate change will have major implications for world agriculture. There are likely to be efforts to mitigate emissions by the sector and to increase its contribution to the removal of carbon from the atmosphere. In addition, the sector will need to adapt to changes in temperature and rainfall patterns, and to greater climatic instability. Policy initiatives to promote mitigation and adaptation may be prompted by domestic political concerns or by international climate agreements.

Policy instruments for agriculture that are emerging in response to climate change pose challenges for the international trading system. At the broadest level, an open trading system is perhaps the best guarantee for promoting adaptation and dealing with severe disruptions to economic activity as a result of climate change. As different regions face higher or lower temperatures, rainfall, and other climatic changes, trade will allow patterns of production to change over time, and will also compensate for local supply disruptions. If droughts and floods are more common, assistance flowing through established trade channels will be more quickly available. Steps such as the completion of the Doha Round of negotiations in WTO make good sense even in the context of concerns over climate change.

It will be important to avoid any adversarial positions that might cast the trade system as inhibiting the ability of countries to respond in ways that they see as sensible to promote mitigation and adaptation. This is particularly critical in the use of agricultural subsidies, as the domestic politics of incorporating the sector into climate change policy could well prevail over the sensitivities of trading partners. The potential clash with WTO trade rules comes both from the choice of instruments and the way governments choose to implement these.

A key issue from the perspective of international trade is the extent to which mitigation or adaptation measures are consistent with existing international disciplines. What modifications, if any, might be made to allow countries to achieve objectives in this area while, at the same time, preventing undue restrictions on trade? Climate change policies could easily become a guise for protecting domestic food and agricultural sectors from international competition.

Emissions of GHGs (mainly methane, carbon dioxide and nitrous oxide) are generated throughout the entire food and agricultural supply, and distribution system, from the production of agricultural inputs to the final consumption of food products (for example, the miles driven by shoppers to supermarkets or food service outlets). Policy approaches that attempt to include

agriculture in the abatement of GHG emissions and in GHG mitigation can take several forms (Blandford and Josling 2007). These include,

- Reduction in the amount of GHG emissions generated by crop and livestock production.
- Absorption of emissions through photosynthesis and the storage of carbon in organic matter (sequestration).
- Production of crops that can aid the replacement of high GHG-emitting products with potentially lower emitting products (for example, biofuels).
- Switching to alternative energy sources on farms that reduce reliance on carbon-based sources of energy (for example, co-generation).

A range of domestic policy measures can be used to further these aims. These include,

- Taxes—either explicit or implicit levies on agricultural inputs or outputs linked to their embodied contribution to GHG emissions (for example, fossil fuel intensity) or to explicit emissions of GHGs by the sector (for example, methane).
- Subsidies—relating to the generation and adoption of GHG-reducing technologies or practices or to compensate for losses associated with climatic events.
- Regulations—for production processes that limit certain practices (for example, manure management), product standards for embodied GHG emissions (the so-called carbon footprint of products), or mandates on the use of substitute products whose production and consumption is thought to result in lower GHG emissions (for example, mandates on the use of biofuels).

DOMESTIC CLIMATE CHANGE POLICY MEASURES AND CURRENT INTERNATIONAL TRADE DISCIPLINES

The use of taxes to internalize the costs imposed by pollution has long been advocated by economists. The “polluter pays” principle is often proposed as being both an efficient and “fair” approach to dealing with environmental externalities by creating a price for the unpriced effects of economic activity. Some countries already use explicit taxes, such as taxes on energy or fertilizer, primarily to raise government revenue. These could be more broadly applied and targeted to reduce input use in line with environmental policy objectives. Implicit taxes can also be imposed through mechanisms such as cap-and-trade schemes that limit the total amount of emissions and allow the trading of emission permits. If the cap is binding, the costs incurred in obtaining permits will be reflected in higher prices for goods and

services, discouraging the production and consumption of higher emitting products and promoting the adoption of production methods that generate lower emissions. If such taxes impose additional costs on producers, they would not be covered under existing international trade disciplines since they are likely to depress rather than enhance output. The focus of international agreements is primarily on measures that increase the competitive advantage of an industry in a country at the expense of other countries.

Despite this, there might be an issue of implicit subsidization through the exemption of agriculture from climate taxes or the provision of tax rebates (for example, on energy) or through the exclusion of agriculture from GHG limitations under cap-and-trade schemes (especially where farmers are allowed to profit from the sale of GHG-reduction credits). Agriculture is a relatively GHG-intensive sector and this would argue for its inclusion under an emission cap, but there are considerable practical difficulties in monitoring and enforcing regulations in the sector, and in the application of taxes primarily because of the non-point-source (NPS) character of emissions. The free distribution of emission permits (rather than through a required payment) could be considered a subsidy to industries in general, as could payments for GHG reduction credits (sale of offsets), but these measures are not necessarily production enhancing. The more relevant issue is likely to be pressure to impose border tax adjustments (BTAs) to offset the competitive disadvantage faced by domestic producers in countries that use environmental taxes for imports from countries that do not use such taxes. This issue is discussed further below.

In a manner similar to cap-and-trade schemes, process or product regulations (including product standards) are likely to impose additional costs on domestic producers. This is unlikely to enhance international competitiveness and would be unlikely to be challenged by other countries. The more relevant issue for international disciplines is when such standards are imposed on products imported from other countries. Trade can also be affected by private standards, especially product or production requirements that are largely outside the control of policymakers. These issues are discussed in more detail below.

Policymakers are often reluctant to impose taxes on farmers, and have a predilection for the use of subsidies (that is, the use of carrots, rather than sticks) to pursue environmental objectives in agriculture. The treatment of subsidies in WTO has a complex legal history built on experiences with the GATT. Subsidies for agriculture are currently covered both by the SCM and the AoA.

Under the SCM, the qualifying characteristics of a subsidy are that it entails a financial contribution; is made by a government or public body within the territory of a Member; and confers a benefit. A subsidy is not subject to the full disciplines of the SCM unless it is specifically provided to an enterprise or industry, or a group of enterprises or industries. Certain subsidies are prohibited (export or local

content subsidies) and others may be actionable (subject to challenge). Non-prohibited subsidies may be challenged on the basis of injury to a domestic industry through imports of subsidized products; serious prejudice (for example, through displacement of exports to the subsidizing Member or in a third country market); or through nullification or impairment of benefits (for example, improved market access under a negotiated reduction in bound tariffs being undercut by the effects of the subsidy). During the implementation period of the AoA until 1 January 2003, special exemptions applied to agricultural subsidies, but these are now subject to the provisions of the SCM.

A wide range of explicit or implicit subsidies could potentially be provided to farmers as part of climate change policies. Some of these might qualify under the Green Box (Annex 2) heading of the AoA as minimally production- and trade-distorting domestic support. Prime examples would be expenditures on research and development for new production methods or technologies related to mitigation/adaptation, or expenditures incurred in the diffusion of knowledge related to these. It is unlikely that such expenditures would be challenged by other countries in WTO, particularly since some of the benefits may be transferable across borders.

Other measures that might fall under the Green Box are payments under environmental schemes with objectives linked to climate change; for example, the promotion of mitigation activities such as reduced tillage, idling of farmland, or its conversion to sequestration activities, such as the production of woody biomass. Agriculture can play a role in sequestering atmospheric carbon by avoiding deforestation, using environmentally sensitive lands (for example, peatland), and adopting certain production practices. The Green Box provisions for payments under agri-environmental schemes, if strictly applied, are quite limiting. They restrict payments to compensation for extra costs incurred or loss of income involved in complying with a programme, that is, they exclude incentive payments. While some farmers may be willing to participate in environmental programmes without receiving payments in excess of compliance costs or income foregone, others may not. If payments are to be made for sequestration activities, these might need to not only cover their costs, but also reflect the benefits generated by keeping land out of agricultural production and in agro-forestry (that is, the value of carbon removed from the atmosphere). If payments enhance production, they would be potentially subject to challenge under the SCM. Since sequestration payments may reduce agricultural production, they are unlikely to be considered a production-/trade-distorting payment for agriculture, although they could affect trade in woody biomass products (bioenergy or timber).

Payments under schemes linked directly to clearly defined agri-environmental objectives are likely to be superior to payments with other primary objectives, such as income support, even if these have environmental provisions (for

example, keeping land in good environmental condition). There is a strong likelihood of over-compensation for the provision of environmental goods, and a higher likelihood of production and trade distortions through payments that are indirectly targeted to environmental outcomes. If environmental objectives are to become more important in agriculture, the use of incentive payments for the provision of environmental goods will inevitably surface as an important issue. Some recoupling of payments to production may be required to achieve environmental objectives, but there is a need for consensus on what is permissible. There is also a need for contestability (through notification and enhanced scrutiny with possibilities for challenge) to limit the possibility that environmental schemes will become a popular vehicle for protection.

Other forms of expenditure associated with climate change policies may or may not qualify for the Green Box, for example, domestic subsidies for the adoption of new technologies; payments for crop or livestock losses associated with climatic events; or insurance subsidies. Government financial participation in crop or income insurance, income safety net programmes, and payments triggered by natural disasters are permitted under the Green Box, but only under strict conditions on when payments are triggered and their nature. Such payments can be justified on the grounds of the social benefits of sharing risks associated with climate change, and these approaches are likely to become more important with increased climatic instability. However, current Annex 2 provisions seek to ensure that these types of payments do not become a permanent subsidy and are minimally production-distorting. When there is a continuing element of subsidy (for example, through a government-supported insurance scheme), payments are most likely to fall under the heading of Amber Box support—either product-specific or non-product-specific—and should be notified as such under the AoA.

Payments related to structural adjustment (including investment subsidies) and for permanently disadvantaged regions are included under the Green Box category, providing that these satisfy certain conditions. Such payments could become more prevalent if climate change severely disadvantages some producers or regions, and governments seek to address this through structural measures, such as the retirement of land or diversion of land to other uses, or through the promotion of "climate proofing" investments, such as investment in infrastructure. However, if subsidies for inputs are used to further mitigation or adaptation objectives, these would generally qualify for inclusion under the Amber Box rather than under the Green Box.

Other forms of support that may be associated with climate change adaptation (for example, irrigation subsidies) should be included in Amber Box notifications (as product-specific or non-product-specific support), but overall the treatment of input subsidies in domestic support notifications tends to be weak. This is important since such subsidies can be counterproductive in terms of achieving climate change

mitigation, and can have negative impacts on natural resources. Subsidies related to the use of fertilizer, energy or water can be particularly problematic.

Agriculture is increasingly being called upon to provide biomass for non-food uses. This is particularly so with biofuels. The role of biofuels in climate change is debated, particularly whether and to what extent the replacement of fossil fuels by biofuels reduces the impact of energy consumption on the atmospheric concentration of GHGs, and the broader environmental impact of biofuel production on soil and water resources. The treatment of biomass production for non-food uses is an important issue. Even though government policies for biofuels are not the only factor contributing to higher global food prices, there is considerable concern about their potential impact on poor consumers (Babcock 2011; Wright 2011). Currently, subsidies for the production of agricultural products that can also be used as feedstocks for biofuel are required to be reported as product-specific support under the AoA. However, there is some ambiguity as to whether biomass produced exclusively for energy use would be covered by this requirement.¹ In addition, a significant amount of the support provided for biofuel feedstocks is currently attributable to the increased demand generated by consumption or blending mandates for biofuels. The indirect support provided through such measures is not covered by the AoA or the SCM.

BORDER MEASURES ASSOCIATED WITH CLIMATE CHANGE POLICIES AND INTERNATIONAL TRADE DISCIPLINES

Concern is often expressed that domestic environmental policies can be undermined by international trade. There may be pressure to offset the competitive effects of taxes or environmental regulations through adjustments in tariffs or other border measures. If a domestic industry is being taxed to reduce the use of fossil fuels or emissions of GHGs, imports from competing countries using similar technologies will not help to achieve these objectives globally but will simply result in “carbon leakage” through cross-border relocation of production. The tax merely redistributes emissions among countries and does not achieve the broader goal of GHG reduction or fossil fuel replacement. On the other hand, the transfer of production to countries able to employ lower-emission technologies can help to achieve an overall increase in global efficiency by generating lower carbon emissions per unit of agricultural output. Climate change is likely to alter comparative advantage in many countries. Given the demands that will be placed on global agricultural resources by an expanding world population, it is important that increased global production of food is associated with a reduction in its relative environmental footprint. Achieving a reduction in emissions in each country individually is not necessarily the most efficient way to achieve a reduction in global emissions. This is likely to

require the relocation of production to more environmentally efficient regions (Nelson et al. 2009).

Where carbon leakage occurs, countries have a limited ability to adjust tariffs under existing WTO agreements to address the issue. If applied tariffs are less than bound tariffs, they could be increased, but this cannot be discriminatory. This means that they cannot be targeted on products from countries that generate high emissions per unit of output. Hence, while a general tariff increase could help to reduce imports from high carbon emitters with relatively low production costs, it will disproportionately affect low carbon emitters with relatively high production costs. A carbon tax is a broad-based tax and raises issues similar to the use of sales taxes or value added taxes. If industries are taxed at the point of production (the origin principle), then a country's exports will be disadvantaged and imports encouraged unless imports face the same tax and corresponding domestic products are taxed in the country of destination. BTAs are consistent with WTO rules, but their implementation could cause problems and could be challenged on the basis of a violation of the non-discrimination principle of GATT.²

Article XX of GATT provides some exceptions for the use of border measures that are inconsistent with GATT principles. Exception (b) covers measures “necessary to protect human, animal or plant life or health” and exception (g) covers measures “relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.” The use of measures relating to these exceptions has generated a limited number of dispute settlement cases (for example, the Shrimp-Turtle case involving the United States). The ruling in that case (that a prohibition on imports of products that were caught in ways that could cause injury or death to sea turtles was permissible, but only if applied in a non-discriminatory way) seems to open the possibility that non-discriminatory import restrictions could be imposed under exception (g), where applicable. However, following the line of reasoning above in connection with the use of tariffs, the requirement for the non-discriminatory application of restrictions would limit severely the practical usefulness of the exception in the context of WTO agreements. This issue also has relevance for the use of product standards and labelling, as discussed below.

Despite the questionable status of environmental provisions under WTO agreements, a growing number of free trade agreements (FTAs) are incorporating such provisions. Ever

1 The AoA refers to “basic” agricultural products and to support in favour of “agricultural producers”. The list of agricultural products covered by the agreement (Annex 1) does not include wood or most cellulosic fibres but does cover oilseeds. So it would appear that some bioenergy feedstocks are potentially covered by the agreement, while others are not.

2 Article III of GATT specifies that BTAs should not be applied so as to afford protection to domestic production, so their calculation could be challenging. Also, a regulation is not a tax, so a levy on imports designed to match compliance costs (for example, additional costs imposed by cap-and-trade) is not strictly a BTA.

since the conclusion of the North American Free Trade Agreement (NAFTA), the US has included environmental provisions into its FTAs, including those with Australia, Singapore, Peru, and Chile, using the principle that any restrictions should be based on scientific evidence. In contrast, the European Union (EU) has taken the view that trade restrictions should be permitted for environmental protection based on the precautionary principle. Negotiations on the Canada-EU FTA have been considering the inclusion of this principle. The EU-Singapore FTA embodies the principle of sustainable development and measures designed to promote “green” growth. Both the EU and the US have sought to use trade restrictions to prevent illegal logging. The EU has discriminatory carbon-based restrictions on imports of biodiesel.³

Incentives for the production and use of biofuels are increasingly important for international trade. A number of countries, including Brazil, the EU and the US use mandates and tax incentives to promote the use of biofuels. It has been argued that mandates sometimes give a preference for the use of domestically produced biofuels and can also stimulate exports. The EU uses environmental standards (net reduction in carbon emissions) to discriminate among different biofuels, and these standards may discriminate against certain types of imported products (Swinbank 2009). Restrictions on trade (whether through import regulations or other measures) resulting from biofuel policies may be subject to challenge under existing international trade law. This has already happened in the application of carbon footprint standards by the EU. Despite this, the measures might be justified under Article XX (Lendle and Schaus 2010). Direct subsidies for the production of biofuel feedstocks that qualify as agricultural are supposed to be reported to WTO and are also potentially subject to challenge under the SCM. However, implicit subsidization through mandates and other domestic regulations is more difficult to challenge because of the need to establish that an implicit subsidy is generated and that it meets the conditions of the SCM. If biofuels continue to be a major part of renewable energy policies, it seems likely that the potentially trade-distorting effects of these policies will become more important, and this could lead to trade tensions and disputes (Josling et al. 2010).

PROCESS OR PRODUCT REGULATIONS AND CRITERIA FOR ENVIRONMENTAL LABELLING

The application of environmental standards to food products and the use of environmental labelling are becoming popular in many countries. Various categorizations can be used, but the most popular is labelling based on the carbon “footprint” of a product. This typically corresponds to an estimate of the amount of carbon generated in GHGs in the production, processing, and transportation of a given food product. A large number of carbon labelling initiatives have

been launched since 2007. The majority of these are private voluntary standards (PVS) initiated and implemented by retailers. Retailers use PVS to address the perceived concerns of consumers about the environmental implications of their purchasing decisions. Labelling of the carbon footprint of products informs consumers who are concerned about the potential environmental impact of their purchasing decisions and keeps them as customers. Retailers may also be able to collect a price premium from consumers willing to pay for low-carbon goods. Early adoption of carbon-monitoring systems may provide a first-mover advantage over competitors in the longer term (MacGregor 2010).

There are many challenges involved in measuring the carbon footprint of food and agricultural products. Ideally, one would wish to use Life Cycle Analysis (LCA), that is, the total amount of carbon emissions associated from the full industrial process of producing and distributing a good. However, estimating LCA carbon content is extremely difficult in many cases. Comparison of carbon emissions based on simple concepts such as “food miles”—the distance that a product travels—can be extremely misleading because of major differences in emissions in production. Products may differ substantially in the energy required to produce them, for example, and a product that has travelled a long distance may have lower emission content than one produced locally under energy-intensive conditions. Because of its exclusive focus on transportation, labelling based on food miles is likely to benefit local products and disadvantage internationally traded products.

PVS are likely to impose additional costs on suppliers through their implications for process requirements and the need for monitoring and verification. They are likely to put small-scale producers at a particular disadvantage and can be challenging for producers in developing countries. However, it is difficult to argue that many PVS are an explicit discriminatory device against traded products, since they are also generally imposed on local suppliers. Local small-scale suppliers of food and agricultural products are often vocal in complaining about the difficulties that PVS can create for them. The difficulty arises if PVS are transformed into legislated standards (LS), and if these are structured in such a way as to discriminate against imports.

The treatment of product standards is covered by the Agreement on Technical Barriers to Trade (TBT); several other WTO agreements, for example, the Agreement on Sanitary and Phytosanitary Measures (SPS), may be relevant. All the agreements indicate that no country should be prevented from taking measures necessary to ensure the protection of human, animal, or plant life or health. The TBT agreement extends this principle to protection of the environment. All indicate that such measures should not be discriminatory

³ Rules introduced by Spain that specifically favour biofuels produced in the EU in legislation that implements the EU’s Renewable Energy Directive have resulted in the filing by Argentina of a WTO complaint (DS443) under the dispute settlement process.

across countries or constitute a disguised restriction on international trade.

The TBT agreement focuses on ensuring equality of treatment in technical regulations for imported products and “like products” of national origin (Article 2:1). An important issue is whether the environmental provision would permit countries to impose technical regulations associated with the environmental characteristics of products, such as their carbon footprint. Would products that involve differing carbon footprints be considered “like products”? Suppose a country decided to require its farmers to use production practices that reduced GHG emissions, could it then require that imports be produced using the same or comparable practices? A priori, the answer would seem to be no. The TBT does not allow countries to impose their production regulations or standards on other countries nor does it allow prohibitions on imports produced using a lower standard. On the other hand, the ruling in the shrimp-turtle case seems to suggest that an exemption to this requirement might be possible under Article XX.

Suppose, instead, a country required all domestic products to be labelled for their carbon footprint, but could it require the same for imported products? The answer is unclear. So long as labelling is required for both domestic and imported products, this would seem to be permitted under the TBT agreement. But, since the TBT agreement requires equal treatment for imports of “like” products, it does not appear that imports alone could be required to be labelled or if the nature of the labelling is likely to result in discrimination. Again there might be a case for an exemption under Article XX if it could be shown that the requirement was necessary for the protection of natural resources.

The issue of the consistency of climate change policies with GATT rules has surfaced directly through the expansion of the EU emissions trading system (ETS) to cover aviation on 1 January 2012. This requires all airlines to acquire and surrender allowances for carbon emissions generated by their flights. It applies to both EU and non-EU airlines and to flights between EU and non-EU airports. While the scheme may contravene some articles of GATT, it may be justified under Article XX primarily since the measure is designed to protect an exhaustible natural resource (the atmosphere) and is implemented in conjunction with similar domestic measures (Bartels 2012).⁴ If this is so, other environmental measures that meet the requirements of Article XX may also be judged to be permissible. The key requirement is that any measures shall not be applied “in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade.”

WTO agreements that relate to standards place particular emphasis on the development of international standards. The SPS Agreement, for example, links the work of bodies such as the Food and Agriculture Organization's (FAO) Codex Alimentarius Commission and the International

Office of Epizootics (OIE) explicitly to the agreement. The role of international standardization is also central to the TBT agreement. This suggests that an international approach to identifying the environmental characteristics of goods, such as their carbon footprint, would reduce the likelihood of standards or labelling requirements being challenged through WTO and could also help to limit the tendency for the proliferation of private standards (Earley 2009; Roberts and Josling 2011).

In many countries where product standards and labelling are an issue, governments are not necessarily in the vanguard in such initiatives. These are often led by private companies. Organizations such as GlobalGAP, which establishes voluntary standards for the certification of agricultural products as being “safe and sustainable” have emerged to provide certification for farmers wishing to prove to retailers that they meet certain production standards. The SCM agreement makes reference to the activities of “private bodies” in the provision of subsidies, so that such activities are not entirely excluded from the ambit of WTO agreements. However, it remains to be seen to what extent specific activities undertaken by private entities that may provide a competitive advantage to domestic producers or disadvantage foreign suppliers could be subject to challenge under WTO agreements. The SCM specifies that this may be the case if “a government makes payments to a funding mechanism, or entrusts or directs a private body to carry out functions (for which a subsidy shall be deemed to exist) which would normally be vested in the government, and the practice, in no real sense, differs from practices normally followed by governments.” (Article 1.1 [iv]).

DEVELOPING COUNTRIES, CLIMATE CHANGE AND INTERNATIONAL TRADE DISCIPLINES

It is generally accepted that the agricultural sectors in many developing countries will face major challenges in adapting to climate change. Countries in tropical and sub-tropical zones are likely to experience significant increases in average temperatures and increased climatic instability. Some areas will face major reductions in precipitation and critical water problems, whereas others could face increases in precipitation and higher flood risk. Estimates suggest that more than 10% of the arable land in developing countries could be affected by climate change (Keane et al. 2009). Much of the projected growth in the world's population is in developing countries, and this will place additional pressures on land and natural resources. The clearance of land, particularly forests, for conversion to agriculture is a significant source of GHGs. There will therefore be an urgent domestic need for adaptation, and an international need to

4 After an extensive discussion of the legality of the scheme, Bartels (2012) concludes, “The important point is that the core of the EU's aviation scheme appears to be justified under Article XX of the GATT.”

promote mitigation in developing countries, while at the same time increasing productivity in the agricultural sector. While it may be extremely difficult to achieve a reduction in the total emissions of GHGs from agriculture in developing countries (and globally for that matter), it will be vital to reduce the intensity of emissions—emissions per unit of agricultural production—at the same time as increasing efficiency in the use of scarce natural resources, particularly water.

The GATT/WTO framework provides for SDT for developing countries; an important issue is how this would be applied to climate change policies for agriculture. The AoA currently provides for special treatment for investment subsidies in developing countries, and for agricultural input subsidies to low-income or resource-poor producers. Rules that are premised on the notion that agricultural subsidies add to surpluses and retain inefficient productive capacity may not be suited to many developing countries, particularly the poorest. Some relaxation of rules for developing countries has been proposed during the Doha negotiations, for example, criteria to be applied to income insurance and disaster relief. Few would argue that developing countries that seek to modernize their agricultural sectors to improve productivity and resilience in the face of climate change should be prevented from doing so through international disciplines. However, the compatibility of certain measures, particularly input subsidies for energy and aids for conversion of land to agricultural uses, with climate change objectives is questionable. In particular, the provision of subsidies for the use of energy or water in agriculture, in developed and developing countries, needs to be avoided if the environmental footprint of agriculture is to be contained.

Investment in basic research and new technologies, for example the development of drought resistance in food crops and more efficient irrigation systems, will be needed to address the productivity challenges facing many developing countries. But of equal importance is addressing structural limitations in the adoption and use of available technology. Several approaches can be taken to remove impediments to adoption, including the strengthening of extension efforts, expanding access to credit and insurance, and greater integration of input and output markets through improvements in local institutions and infrastructure (Lybbert and Sumner 2010). There is considerable scope for national aid programmes and for international financing mechanisms to be refocused to address environmental sustainability in developing countries, while at the same time promoting increased productivity. In addition, existing technical assistance programmes such as Aid for Trade can be strengthened to enhance climate change resilience in the agricultural sectors of developing countries, and to enable them to cope with the challenges and opportunities that will be created for the international trading system by climate change policy (Keane et al. 2009).

WTO PRIORITIES IN THE AREA OF CLIMATE CHANGE

International trade can make a positive contribution to addressing the challenges posed by climate change to global food security. At the same time, the pursuit of climate change policies for agriculture opens up the possibility of conflicts with existing international trade disciplines. The challenge will be to allow countries flexibility in reducing the environmental footprint of agriculture and promoting greater sectoral resilience while at the same time allowing the benefits of freer trade to be realised. There is a need for greater international consensus on what domestic policy measures are likely to be effective for tackling the effects of climate change in agriculture while being the least trade distorting. There is also a need for enhanced monitoring and scrutiny of measures to avoid trade disputes.

The immediate priority for WTO is to conclude the current round of trade negotiations. In doing so, some important priorities relating to climate change measures could be addressed. These include,

1. Clarification of criteria to be applied under Annex 2 of the AoA (Green Box criteria) to ensure that these exempt policies with clear climate change objectives, combined with enhanced transparency and scrutiny of such policies to ensure that they are minimally production and trade distorting.
2. The provision of special exemptions for least-developing countries in the use of measures to increase agricultural productivity and resilience in the face of climate change (for example, certain types of input subsidies that would otherwise be disciplined under the AoA).
3. Greater transparency in the use of explicit and implicit subsidies for the use of biofuels through enhanced requirements for the notification of biofuel policies and scrutiny of such policies.

Over the medium to long term, additional important issues to be addressed in WTO could include,

1. Clarification of preferred domestic policy measures for climate change mitigation and adaptation in terms of effectiveness and minimally distorting effects on international trade, in the same way that measures for domestic support have been classified by colour codes (amber, blue, and green) on the basis of the objective of reducing protection.
2. Clarification of the definition and use of environmental standards in WTO agreements (particularly the SPS and TBT agreements).

3. Clarification of the scope of Article XX and its application in ways that address climate change issues, such as carbon leakage, while minimizing the use of discriminatory trade measures.

The challenges that face agriculture and the world economy as a result of significant climate change cannot be dealt with solely through agreements that focus on international trade. But it is eminently feasible to ensure that these agreements operate in support of global efforts to address climate change.

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TRANSPARENCY AND MONITORING IN AGRICULTURAL TRADE: POLICY OPTIONS FOR THE POST-BALI AGENDA

Timothy Josling

INTRODUCTION

Transparency is an essential aspect of a well-functioning trade system. The need for transparency is particularly acute in the area of agricultural trade, as lack of information about the policy environment can interfere with the ability of markets to react to supply shocks and may exacerbate instability. Food security hinges on adequate information about stockpiles and exporter policies. Adequate information on domestic farm and food policies can also reduce trade tensions and facilitate improvements in the rules under which such policies operate.

There is little doubt that transparency has improved in the trade system as a whole in the past two decades, along with more exhaustive monitoring and surveillance activities. Transparency in the specific area of agricultural trade has also improved, though many issues remain to be addressed. The Secretariat, through the World Trade Organization (WTO) website, provides information on the Agreement on Agriculture (AoA) and related negotiations. However, coverage of the details of national policies is more problematic.

The monitoring of obligations by the Committee on Agriculture has generated a considerable amount of information on agricultural policies. The strong point of the domestic support (DS) notifications is their inclusion of supporting tables that together enable a relatively detailed picture of the type and extent of support offered by the notifying country. The weakness is that the categories into which the support is classified neither provide adequate information on the trade impacts of the policies nor give detailed descriptions of the policies themselves. Moreover, the ways in which different countries choose to notify policy measures are inconsistent.

The topic of improving the monitoring and surveillance of agricultural trade rules has been raised in the Doha Round.

The most recent “modalities” document includes the text of a new version of Article 18 of the AoA. Proposed changes to Article 18 would significantly increase transparency. Under the heading of “objectives,” the new Article calls for “effective surveillance of compliance with obligations” through ensuring transparency and an opportunity to Members to “assess the contribution of the [AoA disciplines] to the long-term objective of a fair and market-based agricultural trading system.” The Agriculture Committee could establish subsidiary bodies (subcommittees) to look more in depth at particular issues. In addition, there is the possibility of submitting a provisional notification pending the final notification.

The proposed Article 18 would require one-off notification of the administration of its tariff rate quota commitments as well as annual notifications of the imports entering under those commitments. Members would also be required to notify the use of the Special Safeguard Measure (and the current Special Safeguard if retained) along with triggers and remedies. In addition, the revision of notification rules “shall require that a Member that provides support that it claims is consistent with Annex 2 of the Agreement shall include in the initial notification a summary of the measure” (WTO 2008).

In addition to those changes, other improvements could be introduced. One of these could include the more complete notification of biofuel subsidies. As both the Agreement on Subsidies and Countervailing Measures (ASCM) and the AoA require notifications of such subsidies, one could coordinate the information and oblige countries to provide enough information to allow a reasoned view on the impact of the development of biofuels on agricultural markets.

With respect to changes in monitoring the Green Box, besides the more complete notification of the policies, a suggestion has been made that the Committee on Agriculture develop a “thematic work programme” on the topic. This could pave the way for more focused work on the trade policy implications of the shift in domestic support to such measures. The Green Box currently contains so many programmes with different output effects that the trade rules themselves may need to be revisited.

The Doha Draft Modalities also include suggestions for making the notification of export taxes more effective. The draft text provides for notification within 90 days of the application of an export restriction, including the reasons for such a measure, and periodic reporting to the Committee on Agriculture of the status of the restriction. Combined with better information on stock levels as a result of the Agricultural Market Information System (AMIS), which combines the resources of the Organisation for Economic Co-operation and Development (OECD), the Food and Agricultural Organization (FAO) and other institutions, information on export restrictions would benefit the smooth functioning of the markets for food and agricultural products.

The first step towards improving transparency could be to adopt the proposals on monitoring (detailed in Annex M) of the Doha Draft Modalities. Though negotiated as part of a package, there would seem to be no reason why it should not stand alone. The proposal does not involve changes in national regulations and would not seem to favour any country over others. It would merely replace the somewhat vague obligations in Article 18 with requirements that are more detailed. Resources could be made available for those developing countries that would have difficulty preparing notifications, though there could be a side-benefit to those countries of having to describe policy measures in an agreed format.

A similar action that would require little in the way of a formal negotiation would be to expand somewhat the amount of information included in the Trade Policy Reviews. This would seem to be preferable to initiating a separate review for agricultural policy as was suggested by the Group of Twenty (G20) in 2007. More radical would be the introduction of incentives for compliance with monitoring requirements and respecting deadlines. These could be based on the potentially useful concept that a specific “benefit” claimed by a Member has to be backed by evidence of eligibility.

More coordination within WTO could also improve transparency and reduce overlapping activities. The notifications of subsidies made under the SCM Agreement have much in common with those under domestic support under the AoA. The SCM notifications are more descriptive and lack some of the structure of the AoA tables. There may be a case for combining the two notifications and allowing each committee to consider the combined report from their viewpoints. This is particularly appropriate in the matter of biofuel subsidies, where coordinated information from the SCM and DS notifications, augmented by agreements on how such subsidies should be reported, would be valuable.

On export restrictions and taxes, WTO could play a useful role in acting as the focal point for information, though analysis of market effects would be undertaken elsewhere. Such information would be particularly needed if the Doha Round were to be concluded with new definitions of food aid and stronger disciplines on export prohibitions and restrictions.

Another suggestion that would require some institutional flexibility would be the broadening of the monitoring of agricultural trade policies to include some interpretation and analysis. This could, for instance, take the form of the integration of various databases (such as that maintained by the OECD for the purpose of monitoring policies among its members) with the information collected through the notifications. The WTO Secretariat has understandably avoided exceeding its mandate to monitor the rules of the multilateral system by engaging in general or specific policy advocacy and advice. But providing information in a way that is helpful to governments and the private sector in taking decisions is clearly within the scope of WTO. So institutional

collaboration could over time improve the transparency of the trade system and the quality of decisions.

TRANSPARENCY AND THE TRADE SYSTEM

Transparency is an essential aspect of a well-functioning trade system. Providing transparency is an integral part of the agreements that set up the WTO, and the WTO Secretariat devotes much of its resources to monitoring compliance with obligations undertaken by member governments. Transparency is important to other trade agreements as well—many preferential trade agreements (PTAs) include explicit conditions designed to increase transparency on a bilateral or a regional basis (Lejarraga and Shepherd 2012). One author concludes that “transparency mechanisms appear to be a particularly cost-effective tool for avoiding unnecessary obstacles to trade” (Moise 2012).

In the area of agricultural trade the need for transparency is particularly acute, as lack of information about the policy environment can interfere with the ability of markets to react to supply shocks and may exacerbate instability. Food security hinges on adequate information about stockpiles and the availability of transportation. Adequate information on domestic farm and food policies can also reduce trade tensions and facilitate improvements in the rules under which such policies operate. This paper attempts to assess the strengths and weaknesses in the current system of monitoring and surveillance of trade and policies in agricultural trade, and suggest ways in which it could be improved.

A FRAMEWORK FOR EVALUATING TRANSPARENCY

Transparency is a broad term covering a number of different aspects. A framework is, therefore, useful for examining the current level of transparency in the trade system. Wolfe and Baddeley (2012) suggest three principle types of transparency that relate to the performance of a trade system—publication of rules and regulations related to trade (“right to know”); peer review of behaviour in the context of obligations (“monitoring and surveillance”); and public engagement in the evaluation of trade policies (“reporting on results”). The publication of rules that affect trade is fundamental to reducing uncertainty and offsetting information asymmetries, both of which are significant components of transaction costs. Moreover, the disclosure of information about government regulations and policies contributes to open and responsive governance. Such disclosure may also have an educational value—countries may, on occasion, change behaviour as a result of legislative transparency.

Monitoring and surveillance is typically carried on among governments and is focused on the obligations that signatories to a trade agreement have undertaken. However, monitoring could also be undertaken by non-governmental actors where credibility is assured. Reporting on the results of trade policy has benefits of a different nature, allowing a more informed debate among governments (internal transparency), as well as in the media and among interest groups (external transparency). Governments may encourage this kind of external transparency, but it is likely to be mainly undertaken by the commercial, research, and education sectors.

GENERAL TRANSPARENCY OBLIGATIONS

The current system of transparency provisions for the WTO is based on Article X of the General Agreement on Tariffs and Trade (GATT) 1994 (Publication and Administration of Trade Regulations), which states (in part) that laws and regulations pertaining to trade be “published promptly in such a manner as to enable governments and traders to become acquainted with them” (WTO 1995a). Similar obligations are contained in the General Agreement on Trade in Services (GATS) Article III (Transparency), which requires prompt publication of measures that pertain to the operation of the agreement on services, and in the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) (Article 63), which covers the same ground for intellectual property protection. More specific requirements are included in the Technical Barriers to Trade (TBT) Agreement (Article 2.11) and in the Sanitary and Phytosanitary Measures (SPS) Agreement (Annex B). In the latter case, obligations to establish “enquiry points” and to follow detailed notification procedures are included.¹ The ASCM contains detailed requirements for notification (Article 25, and Article 26 for surveillance by the SCM Committee). Hoekman and Kostecki (2009, p. 71) report that there are about 200 notification requirements in WTO agreements.

There is little doubt that transparency has improved in the trade system as a whole in the past two decades, along with more careful monitoring and surveillance activities. For information about the WTO, its website (www.wto.org) gives easy access to all (derestricted) documents and provides interpretive notes on such issues as the stage at which trade negotiations are. Trade disputes coming under the Dispute Settlement Understanding (DSU) are fully covered on the website, with summaries provided.

The dispute settlement mechanism is an important part of the process of transparency, shining a spotlight on particular issues, but adding to the collective wisdom of trading partners. The spotlight can be turned on the issue of transparency itself: Lejarraga (2012) notes an increase in transparency-related claims under the DSU. The establishment of the Trade Policy Review Mechanism (TPRM) has contributed significantly to the understanding that countries have of each other’s policies, and is particularly

useful for small countries that lack the resources in their own trade ministries to undertake the necessary research. The process of notification to specialized committees and the ability to ask for clarification from the notifying country may also have taken some of the burden off the dispute settlement mechanism.

The lack of coordinated information on the trade provisions in the multitude of PTAs that have been signed in the past two decades has made any overall view of trade issues difficult. This is being rectified. The WTO Committee on Regional Trade Agreements has thrown light on the trade policies of countries participating in preferential agreements falling under Article XXIV (relating to free trade areas and customs unions). The Committee on Trade and Development performs a similar function for agreements that include developing countries and are authorized under the Enabling Clause. There is a clear overlap between information on multilateral trade policies and those that operate at a bilateral or regional level. As governments, civil society, and private sector actors become more familiar with multilateral trade rules, the interaction between these and regional and bilateral agreements becomes more apparent.

TRANSPARENCY OBLIGATIONS IN AGRICULTURAL TRADE

The range of transparency obligations and activities in this area is shown in Table 1. The categories follow those of Wolfe and Baddeley, with the specific application to the agricultural sector added. With respect to the provision of information on trade-related rules, the general obligations mentioned above apply equally to agricultural regulations and decisions. The Secretariat, through the WTO website, provides information on the AoA and related negotiations. However, coverage of the details of national policies is more problematic. Three problems hamper full transparency in this area—the policies change frequently and in ways that could significantly impact trade; the details of the policies are often complex and their implementation (often the key to understanding their trade effects) is subject to local administrative decisions that are not always publicly available; and the sensitivity of farm policies may prevent governments from making programme details widely available.

The basic architecture of the AoA rests on the schedules of commitments, incorporating tariff cuts, tariff-rate quota obligations, domestic support reductions, and export subsidy limits. The schedules are readily available, though in document form rather than as a database. Other aspects of transparency noted by Wolfe and Baddeley appear to be missing in the case of agriculture. There are no specific

1 | For a fuller discussion of the experience with the SPS and TBT Agreements, see Collins-Williams and Wolfe (2010).

requirements for publishing details of agricultural policies and no “enquiry points” for access to such information. Independent adjudication for agricultural controversies has not been suggested, but this may not be so important as in other aspects of policy. New agricultural policies are supposed to be notified if they are said to be consistent with Green Box, Blue Box, or with development programmes (see below), but there is no general obligation to report trade-related agricultural policy changes.

The main vehicle for monitoring and surveillance in the area of agricultural trade is the notification to the Committee on Agriculture (established in Article 17, AoA) of the levels of domestic support, along with parallel notifications on export subsidies, tariff-rate quotas, and new Green Box measures. The obligation of WTO Members to submit notifications is contained in Article 18 (Review of the Implementation of the Commitments) of the AoA. The Committee on Agriculture is charged with reviewing progress in the implementation of commitments.² The document includes guidelines on the intended frequency and timing of notifications, but apparently these carry insufficient legal weight to override the reluctance of Members to provide information that can lead to criticism (Brink 2010, p. 34). The main DS notifications are due “no later than 90 days” after the close of the reporting period (unless provisional), with a window of only 30 days for those parts of the notification that pertain to new measures under the AoA Annex 2 (Green Box), and Articles 6.2 and 6.5 (Development Programmes and Blue Box). This review “should be based on the notifications by

Members” and by any additional documents requested of the Secretariat. No third-party adjudication is mentioned in the case of agricultural monitoring issues.

EVALUATION OF THE TRANSPARENCY OBLIGATIONS IN AGRICULTURE

Transparency in the specific area of agricultural trade has improved, along with the general improvements noted above, though many issues remain to be addressed. The monitoring of obligations by the Committee on Agriculture has generated plenty of information on agricultural policies. The strong point of the DS notifications is their inclusion of supporting tables that together enable a relatively detailed picture of the type and extent of support offered by the notifying country.³ The weakness is that the categories into which the support is classified neither provide adequate information on the trade impacts of the policies nor give detailed descriptions of the policies themselves. Moreover, the ways in which different countries choose to notify policy

2 The notification requirements were adopted at the second meeting of the Committee on Agriculture in June 1995, and are found in WTO 1995b. They have essentially remained the same since then.

3 Brink (2010) describes the structure of the notification process and the relationship between the required tables.

TABLE 1:

Transparency components in the WTO Agreement on Agriculture

Source: Wolfe and Baddeley (2012) (columns 1 and 2) and author (column 3).

Principle	Components	Agreement on Agriculture
Publication and access	Publication of obligations	Schedules of support reductions
	Publication of laws and regulations	No specific obligations
	Inquiry points	None specified for agricultural policies
	Independent administration and adjudication	None specified in AoA
	Notification of existing and new measures	New green box measures need to be notified
Monitoring and surveillance	Policy clarity	Clarity needed in several areas: Panel reports have provided interpretation
	Peer review	Notification of TRQs, export subsidies and Domestic Support. Discussion in Committee on Agriculture
	Third party adjudication	None incorporated
Reporting and engagement	Internal transparency for governments	OECD, TPRM
	External transparency for citizens and economic actors	OECD, WB, FAO, IFPRI, etc.
	Role for NGOs	No formal role but several NGOs active

measures is inconsistent. This implies that any aggregation across countries is suspect, and even notifications by the same country over time can be rendered less useful by changes in the allocation to support categories. The problems stem in part from a lack of clarity in the agreed notification procedures (and in the terms of the AoA) and in part from the desire of governments to show their compliance with the schedules.

The problems that should be addressed in the DS notifications include the following:

- The definition of non-product-specific support and hence the significance of *de minimis* allowances is unclear. Questions have been raised about the categorization of crop insurance premium support, and other subsidies as non-product-specific when, to the individual farmer, the support is product-specific.
- The level of *de minimis* allowances for developing countries, particularly those with no notified base-period Aggregate Measure of Support (AMS), is dependent on the value of production used. No definition of value of production exists, and countries have used different concepts in their notifications.
- The treatment of input subsidies in some developing countries is controversial. Some countries include these as development programmes (Article 6.2), but the definition of the measures falling under this heading is not clear.

The measurement of market price support (MPS), including the use of administered prices, reference prices and eligible quantities, gives rise to a number of ambiguities. Administered prices have been changed by some countries with no corresponding changes in domestic producer prices. Reference prices can be out of line with current market conditions, leading to misleading interpretations of MPS. The MPS can even be negative when domestic prices are below these historical reference prices, though border support still benefits the producer. The reporting of eligible quantities for MPS calculations is currently inconsistent among countries. Moreover, relatively small changes in policy can be reflected in large changes in the "eligible quantity" reported.

These and other examples of the lack of clarity in the way in which domestic support is defined and consequently notified give considerable scope for countries to present their policies in an inconsistent way (Orden, Blandford and Josling 2010).

The value of the notifications as a way of tracking the effectiveness of the AoA disciplines over time is seriously compromised by the lag in notifications to the Committee. Though several of the major countries have made an effort to bring their notifications more up to date, many still lag behind, mainly developing countries. Notification of domestic support has slipped the most, with 43% of the required notifications for the period up to 2011 missing.

Almost 40% of required notifications on export subsidies over that period have not been supplied.⁴

Some of these issues stem from that concern with the trade effects of domestic support has been focused almost exclusively on industrial countries. These countries have traditionally been the major players in support for agriculture, by maintaining high prices and giving generous subsidies. In contrast, developing countries commonly taxed their agricultural sectors in the past, and were deemed to be less likely to engage in costly subsidy programmes for their large farm populations. As a result, the constraints included in the AoA have not been onerous on developing countries and they, in turn, have not appeared to take the notification requirements seriously. This situation may change in the future. As Brink points out (2010, p. 51), if the Doha Round Draft Modalities are eventually incorporated into a revised AoA, the bulk of allowable trade-distorting support will be available to developing countries as a result of the larger *de minimis* limits applied to the large value of agricultural production.

Among the most pressing issues in the notification of agricultural policies is that of spending under the Green Box (AoA, Annex 2). At present, countries have to report spending under the 12 main headings of Annex 2, but are not required to justify their classification decision, unless requested to do so in a meeting of the Committee on Agriculture. Cerda (2009) has suggested that this is in part because the Green Box criteria are not being enforced (and, therefore, there are no penalties for mislabelling) and in part because the emphasis has been on monitoring reductions in support (in particular, the AMS) rather than those categories that are not subject to reduction. Compared to the detailed reporting required for subsidies by the SCM Agreement, the requirements for notifying a Green Box under the AoA are relatively undemanding.⁵ In some cases, the SCM reporting includes policy details pertaining to agricultural subsidies (which are covered by that agreement as well as the AoA). Policy changes since the introduction of the AoA (and supported by the AoA disciplines) have led to a greater interest in the Green Box, and new policy instruments have been introduced that may not fit conveniently into the categories in Annex 2.

In the area of "reporting on results" and the consequent engagement of the public and stakeholders, much of the recent work has taken place outside WTO, though the

4 | The corresponding figures for missing notifications of tariff quotas and special safeguards are a more modest 11% for each category. A recent report by the WTO Secretariat (WTO 2013a) documents the status of notifications in several areas of reporting on agricultural trade obligations. The results were discussed at the 26 March meeting of the Agriculture Committee, along with ways to improve the situation.

5 | Under the ASCM, any specific subsidies must be notified to the SCM Committee no later than 30 June each year, and notifications must be sufficiently detailed "to enable other Members to evaluate the trade effects and to understand the operation of the notified subsidy programs."

TPRM contributes to transparency by including a section on agriculture in its sector-specific policy reporting. For intergovernmental work (internal transparency), the activities of the OECD have sometimes been useful as a complement to the WTO notification process. But the OECD has played a major role in external transparency by conducting studies and making available the information collected in its database of Producer Support Estimates (PSEs) for all members and a small number of other countries. However, inconsistencies between the OECD calculations of indicators that are common to the PSE and the WTO domestic support systems, such as the level of market price support, hamper comparability.⁶ Work by institutions such as the World Bank, the International Food Policy Research Institute (IFPRI), the FAO, and Regional Development Banks has also contributed to a significant improvement in the understanding of the trade implications of agricultural policies.

Though there is no formal role for non-governmental organizations (NGOs) in the field of reporting, several such institutions have made valuable contributions to the understanding of issues and the distribution of results from trade negotiations. These bodies have been able to track issues that are not adequately covered in the AoA monitoring. One such area is export restrictions and taxes for agricultural goods. This topic received attention in 2008, when the first of two price surges for food commodities hit agricultural markets. Governments in several exporting countries began to limit supplies, leading to rapid increases in prices. Importing countries faced the prospect of being unable to secure adequate supplies from abroad. But until this point, WTO Members had little in the way of consistent data on available stocks, and were unable to assess the significance of exporter policies. Obligations on exporters to take into account the impact of export restrictions on the food security of importing countries is explicit in Article 12 of the AoA, along with the requirement that advance warning be given "as far as is practicable" to the Committee on Agriculture and that importing countries that "have a substantial interest" in the matter be consulted. In 2008, and again in 2010, notice was not given and consultations do not appear to have been undertaken.⁷

A further issue that arose in the context of the sharp price increases of basic foodstuffs in 2008 and 2010 was the growing use of maize and soybeans as biomass for ethanol and biodiesel. This matter was also not illuminated by WTO notifications, as the subsidies paid to companies that used biofuels were not consistently reported to the Committee on Agriculture, according to Josling, Blandford and Earley (2010). They conclude that "WTO notifications provide little insight into the magnitude of biofuels subsidies. In both the agricultural support and industrial subsidies contexts, US, EU and Brazilian notifications of biofuel support have fallen far short of their potential in terms of coverage, timeliness and transparency."

MOVEMENT TOWARDS IMPROVEMENT IN MONITORING

The improving the monitoring and surveillance of agricultural trade rules has been raised in the Doha Round. The most recent "modalities" document, dating from December 2008, includes the text of a new version of Article 18 of the AoA in Annex M. The proposed changes to Article 18 would significantly increase transparency (WTO 2008). Under the heading of "objectives," the new Article calls for "effective surveillance of compliance with obligations" through ensuring transparency and giving an opportunity to Members to "assess the contribution of the [AoA disciplines] to the long-term objective of a fair and market-based agricultural trading system." The Agriculture Committee could establish subsidiary bodies (subcommittees) to look more in depth at particular issues. In addition, there is the possibility of submitting a provisional notification pending the final notification.

With regard to specific aspects of notification, the proposed Article 18 would require one-off notification of the administration of its tariff rate quota commitments, as well as annual notifications of the imports entering under those commitments. Members would also be required to notify the use of the SSM (and the current Special Safeguard if retained) along with triggers and remedies. In addition, the revision of notification rules "shall require that a Member that provides support that it claims is consistent with Annex 2 of the Agreement shall include in the initial notification a summary of the measure" (WTO 2008).

These changes could bring clarity to the monitoring process, though ambiguities in the rules are unlikely to be resolved in this way. In the realm of changes in practice, one change could include the notification of biofuel subsidies, as discussed above. As both the ASCM and the AoA require notifications of such subsidies, one could coordinate the information and oblige countries to provide enough information to allow a reasoned view on the impact of the development of biofuels on agricultural markets.⁸

6 | In contrast to the MPS included in the AMS, the OECD definition compares producer prices (not administered prices) with trade prices (not reference prices) aggregated overall production (not eligible quantities). So the OECD measure of MPS is much more useful as an indication of current trade effects from policy instruments.

7 | The WTO Secretariat has summarized the somewhat limited information contained in the notifications called for by Article 12 (WTO 2013b). Since 1995, eight members have notified 14 export prohibitions and restrictions, including four new members of the European Union (EU). The notifications largely relate to wheat and wheat flour.

8 | It would not be appropriate for the WTO Committees themselves to quantify the impact of biofuels on markets—that is the province of governmental and non-governmental organizations.

With respect to changes in monitoring the Green Box, besides the more complete notification of the policies themselves, one suggestion has been made that the Committee on Agriculture develop a “thematic work programme” on the topic (Cerda 2009, p. 577). This could pave the way for more focused work on the trade policy implications of the shift in domestic support to such measures. The Green Box currently contains so many programmes with different output effects that the trade rules may need to be revisited. In this respect, the data collected by the OECD for the PSE calculations already includes relevant information on the administration of direct farm payments, particularly the extent to which they require production to maintain eligibility.⁹

The Doha Draft Modalities (WTO 2008) include suggestions for making the notification of export taxes more effective.¹⁰ The draft text provides for notification within 90 days of the application of an export restriction (paragraph 172), including the reasons for such a measure and periodic reporting to the Committee on Agriculture of the status of the restriction. Such restrictions would “not normally be longer than 12 months” unless an extension was agreed to by “affected importing Members” (paragraph 179). Combined with better information on stock levels, such as is emerging as a result of the AMIS that combines the resources of the OECD, the FAO, and other institutions, information on export restrictions would benefit the smooth functioning of the markets for food and agricultural products.

CONCLUSION

The need to improve transparency in the area of agricultural trade and policy has been widely recognized. The opportunity for making some constructive changes has led to the negotiation of revised provisions in the AoA as part of the Doha Round. As the eventual fate of the round is still in doubt, there is a case for taking up some of these issues as part of an early harvest. The Bali Ministerial provides an opportunity, though not necessarily the only one, for such action.

The most immediate improvement to transparency would follow from adopting the proposals in Annex M of the Doha Draft Modalities. Though negotiated as part of a package, there would seem to be no reason why it should not stand alone. The proposal does not involve changes in national regulations and would not seem to favour any country over others. It would merely replace the somewhat vague obligations in Article 18 with requirements that are more detailed. Resources could be made available for those developing countries that would have difficulty preparing notifications, though these countries could benefit from having to describe policy measures in an agreed format.

A similar action that would require little in the way of a formal negotiation would be to expand the amount of

information included in the Trade Policy Reviews. This would seem to be preferable to initiating a separate review for agricultural policy, as was suggested by the G20 in 2007.

A more radical change would be the introduction of incentives for compliance with monitoring requirements and respect for deadlines. These could take the form of assumptions of ineligibility for benefits (such as that of excluding Green Box and Development Programmes from the AMS) until eligibility has been affirmed. This would certainly require more than just a simple monitoring decision and could change the legal interpretation of the obligations to notify. It would in effect reverse the current assumption of “compliant unless successfully challenged.” But it would also introduce the potentially useful concept that a specific “benefit” claimed by a Member has to be backed by evidence of eligibility.

More coordination within WTO could also improve transparency and reduce overlapping activities. The notifications of subsidies made under the SCM Agreement have much in common with those under DS under the AoA. The SCM notifications are more descriptive and lack some of the structure of the AoA tables. There may be a case for combining the two notifications and allowing each committee to consider the combined report from their different viewpoints. This is particularly appropriate in the matter of biofuel subsidies, where coordinated information from the SCM and DS notifications, augmented by agreements on how such subsidies should be reported, would be valuable. The time is ripe for an initiative to clarify both the status of biofuel subsidies in WTO rules and the magnitude of such subsidies. The alternative is “continued contention and confusion” (Josling, Blandford and Earley 2010).

On export restrictions and taxes, WTO could play a useful role in acting as the focal point for information, though analysis of market effects would be undertaken elsewhere. A recent paper has made a suggestion that WTO be involved in multilateral action “to develop constructive cooperation in the area of market information with the FAO and other agencies responsible for the Agricultural Market Information System (AMIS).” This would be “in order to better define food security emergency situations in countries considering to impose export restrictions and to evaluate their likely impact on other vulnerable countries” (Howse and Josling

⁹ This issue is explored in Josling and Mittenzwei (2012), which illustrates the use of OECD data to examine compliance with the various criteria for the Green Box categories.

¹⁰ In the Non-Agricultural Market Access talks in the Doha Round, the EU proposed additional disciplines on export taxes. To increase the predictability of export taxes, the European Commission (EC) proposed that WTO members “undertake to schedule export taxes on non-agricultural products in their Schedules of Concessions and bind the export taxes at a level to be negotiated” (Korinek and Bartos 2012). The same change would greatly improve transparency in agricultural markets as well.

2012). Such information would be particularly needed if the Doha Round were to be concluded with new definitions of food aid and stronger disciplines on export prohibitions and restrictions.

Another suggestion that would require some institutional flexibility would be broadening the monitoring of agricultural trade policies to include some interpretation and analysis. This could, for instance, take the form of the integration of various databases (such as that maintained by the OECD) with the information collected through the notifications. As attention switches slowly from a focus on the farm policies of rich countries to the agricultural development strategies of emerging and developing countries, the need for well-sourced information will expand. Both the World Bank and the FAO have considerable experience in this area. The WTO Secretariat has understandably avoided exceeding its mandate to monitor the rules of the multilateral system by engaging in general or specific policy advocacy and advice.

But providing information in a way that is helpful to governments and the private sector in taking decisions is clearly within the scope of WTO. So, institutional collaboration could, over time, improve the transparency of the trade system and the quality of decisions.

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