

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search http://ageconsearch.umn.edu aesearch@umn.edu

Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.





$\underbrace{\textcircled{}}_{\text{The}}E15_{\text{Initiative}}$ Strengthening the global trade system



Do Yesterday's Disciplines Fit Today's Farm Trade? Challenges and Policy Options

Jean-Christophe Bureau and Sébastien Jean

December 2013

E15 Expert Group on Agriculture, Trade and Food Security Challenges

Think Piece

Co-convened with

International Food & Agricultural Trade Policy Council



ACKNOWLEDGMENTS

Published by

International Centre for Trade and Sustainable Development (ICTSD) 7 Chemin de Balexert, 1219 Geneva, Switzerland Tel: +41 22 917 8492 – E-mail: ictsd@ictsd.ch – Website: www.ictsd.org Publisher and Chief Executive: Ricardo Meléndez-Ortiz

World Economic Forum 91-93 route de la Capite, 1223 Cologny/Geneva, Switzerland Tel: +41 22 869 1212 – E-mail: contact@weforum.org – Website: www.weforum.org Co-Publisher and Managing Director: Richard Samans

Acknowledgments

This paper has been produced under the E15Initiative (E15). Implemented jointly by the International Centre for Trade and Sustainable Development (ICTSD) and the World Economic Forum, the E15 convenes world-class experts and institutions to generate strategic analysis and recommendations for government, business and civil society geared towards strengthening the global trade system.

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

The Expert Group on Trade and Innovation is co-convened with International Food & Agricultural Trade Policy Council. www.agritrade.org/

Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra

And ICTSD's Core and Thematic Donors:



Citation: Bureau, Jean-Christophe and Sébastien Jean. *Do Yesterday's Disciplines Fit Today's Farm Trade? Challenges and Policy Options*. E15Initiative. Geneva: International Centre for Trade and Sustainable Development (ICTSD) and World Economic Forum, 2014. www.e15initiative.org/

The views expressed in this publication are those of the authors and do not necessarily reflect the views of ICTSD, World Economic Forum, or the funding institutions.

Copyright ©ICTSD and World Economic Forum, 2014. Readers are encouraged to quote this material for educational and non-profit purposes, provided the source is acknowledged. This work is licensed under the Creative Commons Attribution-Non-commercial-No-Derivative Works 3.0 License. To view a copy of this license, visit: http://creativecommons.org/licenses/by-nc-nd/3.0/ or send a letter to Creative Commons, 171 Second Street, Suite 300, San Francisco, California, 94105, USA. ISSN 2313-3805

ABSTRACT

This piece explores how trade and trade policies have evolved over the last decade and considers the possible implications for the multilateral trading system. Since the Doha Round was launched, the importance of developing countries in world trade of agricultural products has increased dramatically. World markets are seeing higher prices, after trending downward for decades. The development of biofuels has had considerable impact on price levels and market adjustment mechanisms, with the risk of rigidifying crop demand. There has been a downward trend in applied tariffs as a result of unilateral liberalizations as well as regional trade agreements. Despite a number of recent protectionist measures, the current economic crisis has not reversed this trend. Non-tariff measures have also spread, especially in emerging countries, and the proliferation of regional trade agreements has influenced international trade patterns. After the 1994 Marrakesh Agreement, many developed countries reduced the most distorting forms of agricultural support, but recent policy decisions have reversed this trend. Several emerging countries have increased their subsidies to farmers. In addition, some of the disciplines introduced by the 1994 Marrakesh Agreement have lost their efficacy.

While export subsidies and related distortions on the world market have shrunk, export restrictions have become more common. Against this background, we argue that the negotiations should be refocused and, in some cases, rescaled. Doha Round negotiators may have overplayed their hand by understating the cost of failure: scaling down ambition may help in reaching an agreement.

CONTENTS

Introduction	1
The new picture of agricultural trade	1
Market access	4
Domestic support	9
Export competition	13
Policy priorities for the multilateral trading system	13
Conclusions	18
References	19

LIST OF TABLES AND FIGURES

Table 1: The Use of Agricultural Commodities for Biofuels, 2007, 2009, 2011.

Table 2: Preferential, Applied and Bound Tariff Duties, and Share in World Imports, for Agricultural Products, by Group of Countries

Table 3: Mean Base Rate and Preferential Margin by HS Chapter and by Time Elapsed since the Agreement Came into Force (%)

Table 4: PSE in Nominal Value, Real Value and Percentage of Farm Receipts, 2010

Table 5: Total Support Estimate in Nominal Value, Real Value and Percentage of Farm Receipts and GDP, 2010

Figure 1: The Share of Non-LDC Developing Countries in World Trade of Food and Agricultural Products

Figure 2: Nominal Protection Coefficient for Agricultural Commodities in Selected Developed and Emerging Countries, 1995, 2002, and 2011

Figure 3: Share of Trade between RTA Signatories in Global Trade, by Major Sector, 1998–2009 (%)

Figure 4: Producer Support Estimate (PSE) in Selected Developed and Emerging Countries, 1995, 2009, and 2010 (% of total receipts)

LIST OF ABBREVIATIONS

i i		
	AMS	aggregate measure of support
	ASEAN	Association of South-East Asian Nations
1	EU	European Union
	FAO	Food and Agricultural Organization
	FTA	Free Trade Agreement
	G-20	Group of Twenty
	GATT	General Agreement on Tariffs and Trade
	GDP	gross domestic product
	GMO	genetically modified organism
	GSP	Generalized System of Preferences
1	LDC	least developed country
	MFN	most favoured nation
	NFIDC	net food importing developing country
	NGO	non-governmental organisation
	OECD	Organisation for Economic Co-operation and Development
	PPP	purchasing power parity
	PSE	producer support estimate
	PTA	preferential trade agreement
- - - -	RTA	regional trade agreement
	SDT	Special and Differential Treatment
	SPS	Sanitary and Phytosanitary
	SVE	small, vulnerable economies
	TBT	Technical Barriers to Trade
	TSE	Total Support Estimate
	US	United States

- WFP World Food Programme
- WTO World Trade Organization

INTRODUCTION

In 2001, World Trade Organization (WTO) Members agreed to start negotiations that would lead to reductions domestic support for agricultural commodities, in 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 nonfood 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.

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.

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.

1

2

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

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 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.

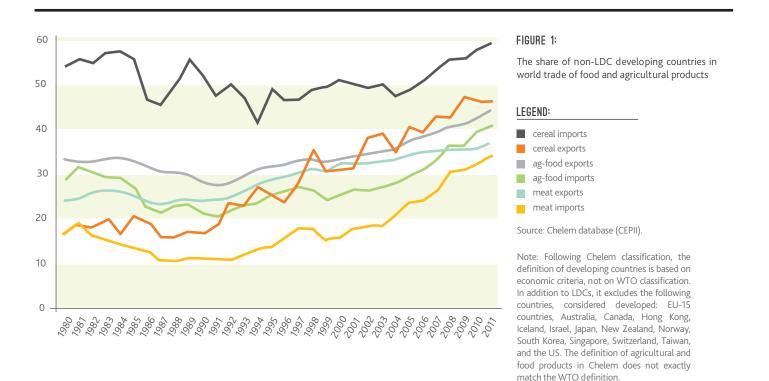
Although higher world prices since 2007 are likely to boost investments in agriculture, and called for by the World Bank (2008), they will hit consumers in the poorest countries. They will also lead to structural changes in land use since the livestock sector tends to become less profitable than arable 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.

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 nonfood 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

TABLE 1:

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

Source: Computed fo 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%

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.

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

³ For those countries that have joined the WTO since 1994, though, the accession procedure resulted in large cuts in bound tariffs.

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%.

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 nontariff 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 nontariff 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

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

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 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,

Baccheta 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.

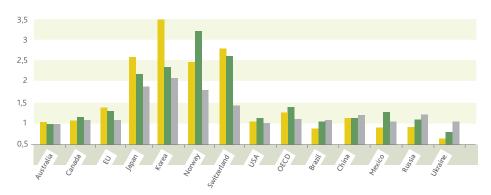


FIGURE 2:

Nominal protection coefficient for agricultural commodities in selected developed and emerging countries (1995, 2002 and 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. 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" 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 comingrecent announcements include negotiations of "megaregional" (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.

Horn et al. (2010) distinguish WTO-plus from WTO-extra provisions. 4 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.

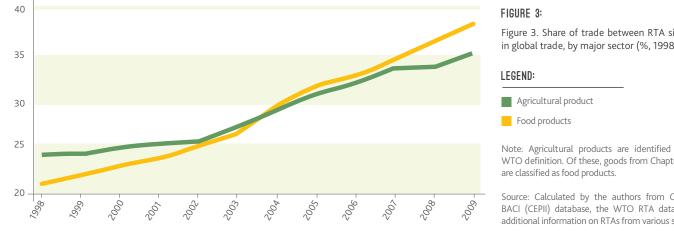


Figure 3. Share of trade between RTA signatories in global trade, by major sector (%, 1998–2009)

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

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 \in 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 \in 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

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).

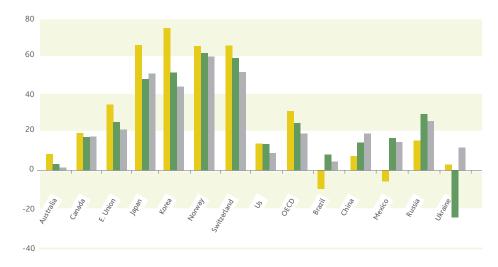


FIGURE 4:

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%

10

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 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

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%

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 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

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.

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, pricediscriminating 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 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.

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.

11

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 productioncoupled 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 likeliness 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 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 megaregional 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-andtrade 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

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.

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.

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). Largescale 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.

REFERENCES

Ackerman, F. and Stanton, E.A. 2013. "Climate Impacts on Agriculture: A Challenge to Complacency?" Working Paper 13-01, Global Development and Environment Institute, Tufts University.

Anseeuw, W., Alden Wily, L., Cotula, L., and Taylor, M. 2012. "Land Rights and the Rushfor Land: Findings of the Global Commercial Pressures on Land Research Project." ILC, Rome. Bacchetta, M. and Beverelli, C. 2012. "Non-Tariff Measures and the WTO." Voxeu.org, http://www.voxeu.org/article/tradebarriers-beyond-tariffs-facts-and-challenges.

Bagwell, K. and Staiger, R.W. 2011. "Can The Doha Round Be a Development Round? Setting a Place at the Table." NBER Working Paper 17650, http://www.nber.org/papers/w17650.

Baldwin, R.E. 2011. "Trade and Industrialisation After Globalisation's 2nd Unbundling: How Building and Joining a Supply Chain are Different and Why it Matters." Working Paper No. 17716, National Bureau of Economic Research.

Baldwin, R.E. and Evenett, S. 2009. *The Collapse of Global Trade, Murky Protectionism, and the Crisis: Recommendations for the G20*. CEPR, http://www.voxeu.org/index.php?q=node/3199.

Baldwin, R.E. and Evenett, S. Eds, 2011. "Next Steps: Getting Past the Doha Round Crisis." www.voxeu.org.

Bilal, S., Ramdoo, I. and de Roquefeuil, Q. 2011. "GSP Reform: Principles, Values and Coherence." Note 2–4, April, European Centre for Policy Development Management.

Bouët, A. and Laborde, D. 2010. "Assessing the Potential Cost of a Failed Doha Round." *World Trade Review*, Vol. 9, Issue 2, pp. 319–51

Bureau, J-C., Fulponi, L. and Salvatici, L. 2000. "Comparing EU and US Trade Liberalisation Under the Uruguay Round Agreement on Agriculture." *European Review of Agricultural Economics*, Vol. 27, Issue 3, pp. 259–80.

Bureau, J-C. and Valin, H. 2011. "Biofuel Programs and Farm Support: New Tools for Old Policies?" Mimeo.

Bureau, J-C. 2012. "Latest U.S. Farm Bill Developments." European Parliament, Brussels. Bureau, J-C. and Jean, S. 2013. "Trade Liberalization in the Bio-Economy: Coping With a New Landscape." *Agricultural Economics*, Vol. 44, Issue s1, forthcoming, pp. 173–82 Butault, J.P., Bureau, J-C., Witzke, H.P. and Heckelei, T. 2012. "Comparative Analysis of Agricultural Support Within the Major Agricultural Trading Nations." European Parliament, Brussels.

Chavas, J.P. 2011. "Agricultural Policy in an Uncertain World." *European Review of Agricultural Economics*, Vol. 38, Issue 3, August, pp. 383–408.

Cline, W.R. 2007. "Global Warming and Agriculture: Impact Estimates by Country." Center for Global Development, and Peterson Institute for International Economics, Washington, DC.

Deininger, K. and Byerlee, D. 2010. "Rising Global Interest in Farmland." World Bank, Washington, DC..

de Jonquières, G. 2004. "Comment," In J. J. Schott (Ed.), *Free Trade Agreements. US Strategies and Priorities*, Institute for International Economics, Washington, DC, pp. 30–33.

EEA. 2012. "The Impacts of Invasive Alien Species in Europe." European Environmental Agency, Technical Report 16, Dec 2012.

Erixon, F. 2012. "The Rising Trend of Green Protectionism: Biofuels and the European Union." ECIPE Occasional Paper 02/2012.

Evenett, S.J. 2012. *Trade Tensions Mount: The 10th GTA Report*. Centre for Economic Policy Research, London.

Evenett, S.J. and Meier, M. 2008. "An Interim Assessment of the US Trade Policy of 'Competitive Liberalization'." *World Economy*, Vol. 31, Issue 1, pp. 31–66.

Gilbert, C. L. and Morgan, C.W. 2010. "Food Price Volatility." *Philosophical Transactions of the Royal Society B*, Vol. 365, pp. 3023–34.

Gouel, C. and Jean, S. 2013. "Optimal Food Price Stabilization in a Small Open Developing Country." *World Bank Economic Review*, forthcoming.

Headey, D. 2011. "Rethinking the Global Food Crisis: The Role of Trade Shocks". *Food Policy*, Vol. 36, Issue 2, pp. 136–46.

Horn, H., Mavroidis, P.C. and Sapir, A. 2010. "Beyond the WTO? An Anatomy of EU and US Preferential Trade Agreements." *World Economy*, Vol. 33, Issue 11, pp. 1565–88.

Kee, H.L., Neagu, C. and Nicita, A. 2013. "Is Protectionism on the Rise? Assessing National Trade Policies During the Crisis of 2008." *Review of Economics and Statistics*, Vol. 95, Issue 1, pp. 342.

Jean, S. and Bureau J-C. 2012. "The Impact of Regional Agreements on International Trade." Mimeo.

Jean, S., Laborde, D. and Martin, W. 2011. "Formulas and Flexibility in Trade Negotiations: Sensitive Agricultural Products in the WTO's Doha Agenda." *World Bank Economic Review*, Vol. 24, Issue 3, pp. 500–19.

Jean, S., Laborde, D. and Marin, W. 2013. "The Political Costs of Policy Reform". Mimeo.

Jean, S., Mulder, N. and Ramos, M.P. 2012. "A General Equilibrium, ex-Post Evaluation of the EU-Chile Free Trade Agreement." CEPAL, Santiago.

Josling, T., Blandford, D. and Earley, J. 2010. "Biofuel and Biomass Subsidies in the U.S., EU and Brazil: Towards a Transparent System of Notification." IPC Position Paper, Sep, International Food and Agricultural Trade Policy Council, Washington, DC.

Lambin, E. and Meyfroidt, P. 2011. "Global Land Use Change, Economic Globalization, and the Looming Land Scarcity." Proceedings of the National Academy of Sciences, Vol. 108, Issue 9, pp. 3465–72.

Lamy, P. 2004. "L'émergence des préférences collectives dans le champ de l'échange international: quelles implications pour la régulation de la mondialisation?" Discours a la conférence Préférences collectives et Gouvernance mondiale: Quel avenir pour le système commercial mondial?

Lobell, D. B., Burke, M. B., Tebaldi, C., Mastrandrea, M. M., Falcon, W. P. and Naylor, N. 2008. "Prioritizing Climate Change Adaptation Needs for Food Security in 2030." *Science*, Vol. 319, pp. 607-10.

Mattoo, A., Ng, F. and Subramanian, A. 2011. "The Elephant in the 'Green Room': China and the Doha Round." Policy Brief, No. PB11-3, May. Peterson Institute for International Economics Washington, DC.

Rodrik, D. 2011. *The Globalization Paradox: Democracy and the Future of the World Economy*. Norton.

Schmidhuber, J. 2007. "Biofuels: An Emerging Threat to Europe's Food Security? Impact of an Increased Biomass Use on Agricultural Markets, Prices and Food Security: A Longer-term Perspective." Policy paper. Notre Europe, Paris.

Sharma, R. 2002. "Developing Country Experience with the WTO Agreement on Agriculture and Negotiating and Policy Issues." Paper presented at the International Agricultural Trade Research Consortium symposium on the Developing Countries, Agricultural Trade and the WTO, Whistler Valley, Vancouver, Canada, 16–17 June.

Swinnen, J. F. M., Squicciarini, P. and Vandemoortele, T. 2011. "The Food Crisis, Mass Media and the Political Economy of Policy Analysis and Communication." *European Review of Agricultural Economics*, Vol. 38 Issue 3, pp. 409–26. Schwab, S. 2011. "After Doha: Why the Negotiations Are Doomed and What We Should Do About It. *Foreign Affairs*, May/June.

World Bank. 2003. "Global Economic Prospects 2004: Realizing the Development Promise of the Doha Agenda." World Bank, Washington, DC.

Wright, B. 2011. "The Economics of Grain Price Volatility." *Applied Economic Perspectives and Policy*, Vol. 33, Issue 1, pp. 32–58.

WTO. 2011. World Trade Report 2011. "The WTO and Preferential Trade Agreements: From Co-existence to Coherence." WTO Publications, World Trade Organization, Geneva.

WTO. 2012. World Trade Report 2012: Trade and Public Policies: A Closer Look at Non-tariff Measures in the 21st Century. WTO Publications, WTO, Geneva.

WTO. 2013. "Compliance with Notification Obligations" (G/AG/GEN/86/Rev.13). Committee on Agriculture, WTO. Geneva.

Implemented jointly by ICTSD and the World Economic Forum, the E15Initiative convenes world-class experts and institutions to generate strategic analysis and recommendations for government, business and civil society geared towards strengthening the global trade system.





COMMITTED TO IMPROVING THE STATE OF THE WORLD