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**Food Export Restrictions: Review of the
2007-2010 Experience and Considerations
for Disciplining Restrictive Measures**

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FOOD EXPORT RESTRICTIONS: REVIEW OF THE 2007-2010 EXPERIENCE AND CONSIDERATIONS FOR DISCIPLINING RESTRICTIVE MEASURES

Abstract

This paper reviews experiences on food export restrictions during 2007-10 and related studies and makes some proposals for disciplining export restrictions through the ongoing Doha Round negotiations. To start with, there is a strategic choice to be made. One option is to limit the disciplining to improving the requirements for notifications, information provision and consultations, along the line of the Uruguay Round Agreement on Agriculture Article 12. This is the choice that has been made by negotiators, as reflected in the draft Doha texts of December 2008. In the mean time, the 2007-10 food crisis and price spikes have prompted calls from many quarters for going beyond that choice to actually disciplining restrictive policies such as export tax and ban. This is the second option in that strategic choice. For option 1, the paper discusses issues and ideas for strengthening Article 12. For option 2, it makes two concrete proposals, as alternatives. One is a Tax-Rate Quota scheme similar to the current Tariff-Rate Quota on imports. The other is a variable export tax scheme. Radical departure is very unlikely to be agreed and these schemes are seen as compromises and first steps. These ideas follow from the review of the use of export restrictive instruments during 2007-10, as well as studies. The second option will require de-linking the new Article 12 from GATT Article XI which permits almost full freedom for restricting food export. The fundamentals of the world food markets have changed and so multilateral trade rules also need to adjust accordingly.

Résumé

Ce document passe en revue les expériences sur les restrictions à l'exportation de produits alimentaires au cours de la période 2007-10 et des études connexes et avance quelques propositions pour discipliner les restrictions à l'exportation à travers les négociations du Cycle de Doha. Tout d'abord, il y'a un choix stratégique à faire. Une option est de limiter les mesures disciplinaires à l'amélioration des exigences en matière de notifications, la diffusion d'informations, et les consultations, en accordance avec l'Accord du Cycle d'Uruguay sur l'agriculture l'article 12. C'est le choix qui a été fait par les négociateurs, comme en témoignent les projets de textes de Décembre 2008. Parallèlement, la crise alimentaire et la hausse des prix en 2007-10 ont suscité des appels de toutes parts pour aller au-delà de ce choix et de discipliner les politiques restrictives comme la taxe et l'interdiction à l'exportation. C'est la deuxième option dans ce choix stratégique. Le présent document aborde les questions et les idées pour le renforcement de l'article 12. Pour l'option 2, il fait deux propositions concrètes comme alternatives. L'une est un régime de « Tax-Rate Quota » d'imposition comparable à l'actuel « Tariff-Rate Quota » sur les importations. L'autre est un régime de taxe variable à l'exportation. Un départ radical est très peu probable d'être accepté et ces régimes sont considérés comme des compromis et des premières étapes. Ces idées découlent de la revue de l'utilisation des instruments restrictifs à l'exportation au cours de 2007-10, ainsi que des études. Dans le cas de la seconde option, il faudra dissocier le nouvel article 12 de l'article XI du GATT qui permet une liberté totale pour les restrictions à l'exportation de produits alimentaires. Les fondamentaux des marchés alimentaires mondiaux ont changé et les règles commerciales multilatérales doivent être ajustées en conséquence.

Resumen

Este documento revisa experiencias y estudios sobre restricciones a la exportación de alimentos del período 2007-10, y realiza algunas propuestas para disciplinarlas a través de las actuales negociaciones de la Ronda de Doha. Para empezar, existe una elección estratégica que es necesario adoptar. Una primera opción sería seguir los lineamientos del Artículo 12 del Acuerdo de la Ronda Uruguay sobre la Agricultura, limitando la disciplina a mejorar los requisitos para realizar notificaciones, para proveer información y para realizar consultas. Esta es la elección tomada por los negociadores, tal como se refleja en los proyectos de texto de Doha de diciembre de 2008. Sin embargo, la crisis alimentaria del 2007/10 y el alza de precios han visto un llamamiento por parte de muchos sectores para ir más allá de esta alternativa, disciplinando las políticas restrictivas como ser los impuestos a la exportación y la prohibición a las exportaciones. Esta sería la segunda opción. El documento aborda temas e ideas que podrían fortalecer el Artículo XII. Con relación a la segunda opción, se hacen dos propuestas concretas y alternativas. Una es crear « Tax-Rate Quota », parecidos al actual sistema de «Tariff-Rate Quota » que se aplica a las importaciones. Otra es crear un esquema de impuestos a la exportación variable. Es poco factible que se busquen salidas radicales, por lo que estos dos sistemas representan un punto de partida y/o compromisos. Para la segunda opción será necesario desvincular el nuevo Artículo 12 del Artículo XI del GATT, que permite total libertad para aplicar restricciones a la exportación. Los fundamentos de los mercados mundiales de los alimentos han cambiado, y también deberán hacerlo las reglas comerciales multilaterales.

1. Introduction

Export taxes and restrictions have a very long history and continue to be prominent policy instruments for both agricultural and non-agricultural products. The recent World Bank studies on distortions to agricultural incentives documents the history and pervasiveness of these measures (Anderson 2009). Export restrictions on foodstuffs came to prominence during 2007-11 as one of the key drivers of the food crisis and price spikes. With projections of tight world food markets and increased price volatility for many years to come, export restrictions have been singled out as one of the key issues to be addressed by the global community of nations. The appropriate place for this is the Doha Round agricultural agreement being negotiated.

The purpose of this paper is to contribute to this work on disciplining export restrictions. This is addressed in Section 4. Following the review of various negotiating proposals and ideas, it proposes two schemes or measures, as alternatives, for disciplining export restrictions. But there is a strategic choice to be made by the community negotiating the trade rules before considering the specific schemes. There are two options.

The first option is to do nothing in this Round to export restrictive measures but to limit to the current provisions of Article 12 of the Uruguay Round Agreement on Agriculture (URAA) and the proposals in the draft Doha texts (the December 2008 draft Modalities), i.e. to try to improve on things like notifications, information provision and consultations. In Section 4, the paper reviews proposals and ideas on this option and identifies several areas where improvements need to be made and could indeed be made. If left to themselves as they currently are, there is a significant risk that the Doha Round disciplines on exports will continue to remain weak as in the Uruguay Round. And given the outlook for high and volatile food prices, this will erode importers' confidence on the world food markets and undermine the progress already made in the global trading system, including in market access and domestic subsidies.

The second option is to go beyond strengthening Article 12 and to actually discipline restrictive measures. This means going beyond what is currently permitted by GATT Article XI. As a result of the food crisis and price spikes, there is a widespread support for this option, although not much has been taking place in the Doha negotiations itself. In Section 4.2, two concrete proposals are made for this – a Tax-Rate Quota scheme, similar to the current Tariff-Rate Quota (TRQ) on the import side, and a variable export tax regime.

These ideas follow almost naturally from the review of the instruments currently used by many countries and from considering genuine concerns of many export restricting countries with price instability and food insecurity. These topics - the “building blocks” for the above proposals - are covered in Sections 2 and 3.

Section 2 surveys the incidence or prevalence of export restrictions on foodstuffs during 2007-2010. The survey shows that export restrictions were often the preferred responses for many countries as they faced the consequences of or the threat from the price spikes. There was also a considerable experimentation with various restrictive instruments from a tax to ban in different contexts. A new scheme for disciplining export restrictions, to command consensus in a negotiating environment, needs to incorporate into it some of the desirable features of these diverse instruments used during the crisis.

Section 3 discusses the economics of export restrictions and covers two topics. The first is a brief tour of the standard trade theory on the consequences of export restriction. As part of that tour, some model-based studies of an *ex ante* nature are also illustrated. The second part reviews some studies undertaken during 2007-2010 and focussed on the food crisis. These sought to understand the specific role of export restrictions in the price spikes as well as the impacts and consequences. The overall consensus is that while an exogenous shock like a drought started the process, export restrictions did amplify, in significant ways, the price rises into spikes. In the process, food importers suffered not just from the high prices but also from inconveniences and uncertainties trying to secure supplies from alternative sources. On the other hand, consumers in exporting countries gained as the rises in food prices were restrained.

In a paper on global trade governance and food security, Konandreas (2011) has argued that to the extent that the fundamentals of the world food markets have changed (towards high and volatile food prices), multilateral rules must also adjust accordingly to be able to address trade issues that may arise also in periods when food is dear. This is essential to ensure the credibility of the global trading system and to foster an environment conducive to more trade openness on the part of importing countries, assuring them that the world food market is a reliable source for imports even in periods of relative scarcity. Besides export restrictions, there are several other elements of the draft Doha texts that need to be revisited with a view to adjusting the rules to the new situation. The adjustments needed were discussed in an earlier paper (Sharma and Konandreas 2008) and covered the following: export restrictions; food aid; export credits; food import financing facility in the context of the Marrakesh NFIDC *Decision*; State Trading Enterprises; stockholding and domestic food distribution; biofuels; and trade facilitation.

2. The incidence and types of export restrictions on foodstuffs

2.1 Incidence

Several agencies and analysts compiled information on export restrictions on foodstuffs during the food crisis. A FAO survey in 2008 (FAO 2008) based on a coverage of 77 countries had showed that roughly one-quarter of the countries imposed some form of export restriction during the food crisis. Other policy responses recorded then were as follows: about half took measures to reduce food import taxes, 55 percent used price controls or consumer subsidies, one-quarter took actions to increase supply drawing on cereal stocks, and 16 percent showed no policy activities whatsoever.

What follows contributes to that literature by extending the coverage to end-March 2011 (2007-2010, in short).² Policy information on export restrictions used below is presented in Annex 1 of this paper. The information is compiled from many sources, notably from the FAO GIEWS' survey of national food policies, which was intensified during the food crisis.³ Annex 1 provides detailed time-line of restrictive measures for the 7-8 countries that were prominent in the media during the food crisis, and briefly for about 20 other countries.

² There are also several papers on restrictive measures on other agricultural products as well as minerals and metals (e.g. Piermartini 2004 and Korinek and Kim 2010). The WTO Trade Policy Reviews have become a valuable source for this type of information.

³ GIEWS, FAO - Country Policy Monitoring: Main Food-related Policy Measures
http://www.fao.org/giews/countrybrief/policy_index.jsp

Two summary tables are constructed – one showing the incidence of restrictive measures relative to all policy measures (Table 1), and the other showing the types of the restrictive measures used (Table 2).

Table 1 shows that of the sample of 105 countries covered with some information on food policy measures (export restrictions and many others), 33 countries (31 percent of the sample) resorted to one or more export restrictive measures. This is only slightly higher than the 25 percent recorded in the 2008 FAO survey. Likewise, 16 percent of all the 528 food policy measures recorded were export restrictive measures. Excluding the five countries in the “others” region (the sample is not representative enough for the region), Asia tops the list in terms of countries applying restrictive measures – 50 percent of all, versus 21 percent in Africa and 18 percent in the LAC. In terms of policy measures also, 23 percent of all measures were export restrictive for Asia, versus 10 percent in the other two regions.

Table 1 - Food export restricting *countries* and restrictive *measures* in a sample of 105 countries, 2007 to end-March 2011

Region	----- Countries -----			----- Measures -----		
	All countries covered (#)	Export restricting countries (#)	% of restricting countries	All policy measures (#)	Export restriction measures (#)	% of restrictive measures
Africa	42	9	21	142	15	11
Asia	30	15	50	210	49	23
LAC	28	5	18	148	15	10
Others	5	4	80	28	8	29
Total	105	33	31	528	87	16

Source: Author, based on information in Annex 1 for export restrictions and FAO food policy monitoring database for other measures.

Next, Table 2 illustrates the various types of export restrictive measures used by the eight major countries covered and a summary for other 20 countries. The instrument in **bold** is considered to be the most commonly used measure.

One typical practice common to many of the cases in Table 2 is to combine various instruments, both sequentially and concurrently as governments reacted to rapid changes in food prices at home and in the world markets. There were three cases where only a single instrument was used: MEPs on Basmati rice by India; MEPs on all rice varieties by Pakistan; and quotas by Ukraine on all products. In other cases, there were combinations: ordinary tax, variable tax and quotas by Argentina; VAT rebate, tax and quotas by China; ban, MEP and ban again on ordinary rice by India; ban, quotas, ban on wheat by India; tax, ban, quota on rice by Egypt; tax, ban and quota on wheat by Pakistan; tax and ban by Russia; and ban, MEPs and progressive tax on rice by Vietnam. Although subject to further analysis, this experience shows that various countries find different instruments appropriate for different products at different times. In general, a more restrictive measure is used when spikes are more pronounced. This preference for the combination of instruments needs to be taken into account in considering alternatives for disciplining export restrictive measures (Section 4).

Table 2 - Illustration of the use of various export restrictive measures during 2007-2010

Country	Product	Restrictive policy instruments used
Argentina	Wheat, maize, soybean, sunflower seeds	Tax (<i>ad valorem</i>), Tax (variable), Quota, Ban
China	Rice, wheat, maize, flour	Tax (<i>ad valorem</i>), Quota/license
India	a) Basmati rice b) Ordinary rice c) Wheat	a) MEP , Tax (specific), STE b) Ban , MEP, STE c) Ban , Quota, STE
Egypt	Rice	Tax (specific), Quota, Ban
Pakistan	a) Rice (ordinary and basmati) b) Wheat	a) MEP b) Tax (<i>ad valorem</i>), Quota, Ban
Russia	a) Wheat, maize, barley, flour b) Rapeseed	a) Tax (<i>ad valorem</i>), Ban b) Tax (<i>ad valorem</i>)
Ukraine	Wheat, maize, barley	Quota
Vietnam	Rice	MEP , Quota, Ban, Tax (variable), STE
Other 20 countries	35 products affected, mostly cereals, but also sugar, beans, oils, cattle	Ban in 32 cases, 1 MEP, 1 Tax (<i>ad valorem</i>) and 1 STE

Source: Author, based on Annex 1.

Note: In a majority of cases, multiple instruments were used, both concurrently and sequentially. The instrument shown in **bold** is considered to be the most common measure used. MEP is minimum export price and STE is state trading enterprise.

2.2 Understanding various forms of export restrictive measures

As an integral part of the review of the experience during 2007-2010, this sub-section provides briefs on various instruments used. This understanding is essential for considering alternatives for disciplining such measures in the Doha Round. Based on Table 2, the following eight instruments are discussed. For the purpose of this paper, export restriction is a general term used to indicate all forms of restrictions, from a tax to the ban.⁴ All these measures have the effect of reducing the flow of export, and so should fall within the scope of the measures aimed at “prohibition and restriction” of exports in GATT Article XI.⁵

1. Export tax – specific, *ad valorem*, mixed
2. Export tax - variable
3. Export tax – differential (DET)
4. Minimum Export Price (MEP)
5. Quota
6. Government to government (G2G) sales
7. Export ban or prohibition

⁴ Adjustment of the VAT rebate rates could also be added to this list because this also influences exports. This instrument was found to be used in one case (China).

⁵ This list reminds of the list of measures in the footnote to URAA Article 4 for imports which were prohibited by that Article with the exception of ordinary customs duties, TRQs and Special Treatment (Annex 5).

8. State Trading Enterprises (STEs)

Ordinary export tax

Also known as ordinary customs duty, an export tax could be in specific or *ad valorem* form, or mixed, typically the applied rate being higher of the two. For imports, a specific tariff provides greater protection as import prices fall. Similar consideration applies to an export tax. If based on f.o.b. value, a fixed specific tax results into higher *ad valorem* rates when domestic prices are falling, thus providing greater protection against exports at all times to lower-valued products (e.g. to ordinary than to superior rice). Difficulty in customs valuation is also a factor for favouring a specific tax. Also for this reason, an export tax is often applied to constructed values, including a MEP and the world price.

In theory, under some assumptions, all restrictive measures have an equivalent tax and thus some level of tax should substitute for other measures like quota, and a prohibitive tax being the same thing as a ban. In the survey, export taxes were not that high, the maximum being about 40 percent.⁶ This is in contrast to the case with tariffs on the import side. One reason why taxes are relatively low could be that other forms of restrictions are not prohibited by GATT/URAA rules, and so there is no need for very high taxes.

GATT Article XI permits export taxation. But as this is not bound, it does not mean much. Simply banning other restrictive measures without first capping export taxes does not achieve anything useful.

Export tax - variable

These are progressive tax schedules where the applied rate varies directly with the world market price, i.e. higher the world price, higher the tax. The key motives are domestic price stabilization and revenue. Table 3 illustrates two such examples. In March 2008, the Argentine government modified export tax regime by implementing a sliding tax scheme, based on fob prices for wheat, maize, soybeans and sunseed. The table shows the details for wheat only. The minimum and maximum rates in the bands for other products were as follows: maize 25 percent and 40 percent (prevailing fixed rate 25 percent), soybeans 23.5 percent and 49 percent (prevailing fixed rate 35 percent) and sunseed 23.5 percent and 45 percent (prevailing fixed rate 32 percent). This scheme was announced for four years, but was discontinued in just four months, reverting in July 2008 to the fixed tax regime. Such a scheme may be compared with Chile's price band policy under which import tariffs varied automatically with the moving averages of the world market prices. A WTO dispute panel found that scheme not WTO-compatible for imports and Chile has discontinued that policy. The Indonesian palm oil progressive tax regime continues.

⁶ Even for minerals and metals, applied taxes are low (in the 3-30 percent range) (Korinek and Kim 2010), despite many of the exporters enjoying considerable market power.

Differential export tax (DET)

Under a DET, processed products are taxed at a lower rate than a primary product. This raises the profitability of the processed sub-sector by keeping the price of the raw material lower, thus creating a subsidy effect for the former. In the literature, Argentina's tax policies on

Table 3 - Two illustrations of variable/progressive export tax

Indonesia - Palm Oil ^{1/}		Argentina - Wheat ^{2/}	
Reference band (world price US\$/tonne)	Export tax (%)	Reference band (world price US\$/tonne)	Export tax (%)
< 700	0	< 200	20
801 - 850	4.5	201-300	20 to 24
951-1 000	10	301-400	24 to 30
1,051 – 1,100	15	401-600	30 to 46
1,151 – 1,200	20	> 600	46
> 1,251	25		

1/ Selected bands only (there are other bands also). 2/ Although announced for four years in March 2008, this was discontinued in four months. For wheat, the prevailing fixed tax then was 28 percent.

wheat and oil sub-sectors have been the most cited examples of a DET. For example, for the Argentine vegetable oil sub-sector, with taxes of 23.5 percent on soybeans, 19.3 percent on soybean oil and 20 percent on soybean meal in 2005/06, the differential amounted to 4.2 percent for oil and 3.5 percent for meal. According to an USDA estimate reported in Deese and Reeder (2007), the differential between the first two products amounted to about US\$8.50 per tonne of soybeans (based on an Argentine soybean price of US\$227 per tonne in 2005/06). The corresponding tax savings for the processing sector amounted to 43 percent of the variable costs of processing soybeans into soybean oil and soybean meal. Wheat and wheat flour are other typical examples in agriculture, although one finds more DETs in other products (metals and minerals, hides and leather). Aside from this important "subsidy" effect created, a DET has effects similar to an export tax.

In the draft Doha texts, there is a section heading called DETs, but placed within square brackets without any text as yet. Some negotiating proposals have addressed DET, e.g. the Cairns 2000 proposal (G/AG/NG/W/93) where the call for the removal of the DETs was linked to the removal of tariff escalation on the import side. The US proposal (G/AG/NG/W/15) also called for prohibiting the use of DETs used for competitive advantage or supply management purposes, but these are not explained

Minimum Export Price (MEP)

As Annex 1 shows, MEPs were popular during 2007-2010. Under a MEP, no export is allowed below the set minimum price. The MEP is often used together with export tax. The challenge is in setting the right price – a low MEP may not stabilize supplies at home and a very high MEP could amount to an export ban. A MEP is also preferred for revenue reason when world prices are surging, e.g. Vietnam used to revise the rice MEPs every month. Yet another reason for preferring a MEP is to prevent under-invoicing. This is especially so for products with several different varieties found mixed in the market (like rice, fruits) that cannot be easily separated at customs. In such cases, the MEPs are handy in ensuring that only higher quality products are exported while the rest is sold locally.

The MEPs are often subject to conditions and notifications and are reviewed periodically. In announcing the rice MEPs in Pakistan in May 2008, it was reported in the media that the government was considering a total ban on exports but agreed to the MEPs after the representatives of the rice association, REAP, agreed to various conditions set by the ministries, including a commitment from the REAP to provide rice for public needs (e.g. buffer stocks). The MEP was also the preferred instrument for the India Basmati rice and onions. The story of the MEPs on the Indian onions is both interesting and useful for this paper and is summarized in Box 1. It shows that among other things even high MEPs were not effective and eventually a ban was imposed. Media also reported of intense debates taking place then among various ministries on the minimum prices, with agriculture minister at one time arguing for slashing the MEPs in the interest of farmers.

Box 1: The Indian onions case – MEP to export ban to MEP for restraining domestic price

The Indian onions story during 2010/11 shows how fast supply/price events develop and the government had to respond by adjusting MEPs. The domestic prices of onions started to rise from November 2009 and subsequently MEPs were imposed. The MEPs remained fairly low by the end of summer 2010 (US\$220/t in August). In the next 2-3 months, the MEPs were raised markedly, reaching US\$425/t by October and US\$525/t in November. In December, the MEP was more than doubled to US\$1 200/t. As even this was not considered enough, a ban was imposed. The ban was removed after two months on 17 February 2011, replaced by a MEP of US\$600/t. As domestic prices started to crash and farmers protested, the MEP was slashed down in 3-4 quick moves to US\$170/t by end-March, more in line with the US\$170-200/t export prices from other exporters (Pakistan, China, Iran). As a result, export contracts resumed. The domestic retail price of onions reached Rs 70-90/kg (US\$1.6-2.0/kg) in December 2010 at the height of the crisis, versus only Rs 10-15/kg (US\$0.22 - US\$0.34/kg) in March 2011. The case illustrates the challenge in setting the correct MEPs when prices soar, as well as the limitation of even high MEPs and the imperative to switch to a ban. This is on top of channeling all exports through a parastatal.

Source: Author, compiled from media reports.

Quota

Quotas were used extensively during 2007-2010. A quota simply indicates the maximum amount of the product that is allowed to be exported. Note that this is a simple quota that is prohibited by the URAA on the import side and not a Tariff-Rate Quota (TRQ) that is permitted. In the 2007-10 survey, not a single case was found of a TRQ-like measure used on exports, although the combination of taxes and quotas used in many cases gives that impression. The effectiveness of a quota depends on its size relative to export demand. Giving the crisis situation, most of the quotas set by countries during 2007-10 must have been small enough and binding. This was found to be the case in one study that attempted to quantify the impact – for wheat in Ukraine where the imposition of the quota reduced domestic price considerably (discussed in the next section based on World Bank 2008). Determining the right size of the quotas is never easy and quotas have downsides such as the need to allocate them to exporters, and minimize rent-seeking activities and corruption. These issues are similar to those that have been so extensively analysed and discussed since 1995 on TRQs on the import side. There were many media reports indicating some debates taking place in countries on the size of the quotas as well as their effectiveness. For example, it has been reported that the Ministry of Finance in Ukraine formulated a draft law to replace quotas on grains with taxes, as follows: 9 percent on wheat, 12 percent on maize and 14 percent on barley. But it was also reported that the Ministry of Agrarian Policy did not agree with the analysis that these tax rates provided the equivalent or desired levels of protection.

Government to government (G2G) sales

Although not defined formally anywhere, many export deals are labelled as G2G sales in the literature. For example, despite the ban, India allowed some exports of rice and wheat to neighbouring countries at cost price from government stocks under what were said in the media as G2G sales. Likewise, rice purchases by the Philippines from Vietnam have also been called G2G sales. These examples also show that there is a gray area between a G2G deal and trade between STEs. In the latter example, although trade took place between two STEs (and governments might have been involved closely in the arrangements), the sales were made through the usual process of tendering, bidding etc, thus involving elements of a G2G sale, STE deals and private trade. Mitra and Josling (2009) provide some examples of the G2G sales during the 1972-74 food crisis, e.g. between the US (exporter) and the USSR, Poland and Japan (importers). Why is G2G sales an issue? One is the question of legal cover – unlike trade between STEs (for which there is a legal cover and rules), what rules govern G2G deals? Are such deals compatible with the MFN principle of GATT Article I (i.e. same opportunity to all importers)? Then there is the economic issue – if the 2007-10 crisis is going to encourage countries towards more G2G deals in the coming years, the world market for rest of the countries (outside the deals) would be thinner and more volatile, and unfair. For these reasons, G2G deals are relevant to discussions on strengthening the world food markets.

Export ban

Also called prohibition, an export ban lies at the other extreme of various forms of export restrictions. Export bans were popular during 2007-10, and indeed the most popular among smaller exporters, many of them LDCs, giving an impression that bans are good candidates for self-targeting special and differential treatment (SDT) instruments. Being at the other extreme in the hierarchy of restrictive measures that begins with an *ad valorem* tax, a ban will also have the most impact in terms of welfare measures and trade flow. Indeed, those who follow global food markets on an almost daily basis know that markets (prices) react the most to the announcement of a ban by a major exporter (relative to the impact of other restrictive measures). It is for this reason that there is a tendency in papers on this subject (and among agencies) to call for a prohibition on export bans. But it is not that simple because there is a “ban-equivalent” for all other forms of restrictive measures, depending on the parameters used (very high export tax, very high MEPS, a tiny quota, tight STE monopoly etc). This means that just prohibiting export ban without disciplining other measures will not work.

State Trading Enterprise (STE)

STE is discussed last because rather than being a measure per se, it is an institution that implements other measures. In the survey in Annex 1, STE was prominent in implementing trade restrictive measures in a majority of cases. The concern with a STE is that by virtue of its monopoly or special privilege, it is difficult to anticipate how it behaves in a crisis situation and responds to fast-evolving developments in the domestic and world markets. Dawe and Slayton (2011) in their analysis of the 2007-2008 rice crisis find that the role of STEs was particularly problematic owing to their lack of transparency in conducting trade. While the private sector is not transparent either (nor necessarily competitive – for some products, large shares of the world trade are handled by 5-6 multinationals companies), its activities are at least guided and constrained by profit motive and competitive forces, which is not true for the STEs. In the draft Doha texts, disciplines have been formulated for exporting STEs, but developing countries are exempted on SDT ground except for large

STEs (world export share of 5 percent or more). This exemption might be problematic for rice and some other foodstuffs.

In closing this section, it is also essential to mention export licensing as yet another instrument that is widely used. Licenses are required whenever there is a need for rationing, e.g. for implementing measures like quotas and MEPs, but obviously not for a ban.

3. Understanding the impact of export restrictions

This section is divided into two parts. The first part provides a brief on the “economics of export restrictions” - the textbook view. Key messages from trade theory are valuable for discussing trade rules. The second part summarizes some prominent studies on the 2007-10 food export restrictions and illustrates how the issues are analysed.

3.1 Economics of export restrictions

In the assessment of the impact or consequences of export restrictions, the following distinction is crucial:

- Small country case (small exporter)
- Large country case (large exporter)

For both cases, the analytical frameworks used could be: i) partial or general equilibrium analysis (PE or GE); and ii) comparative static or short-term analysis versus longer-term analysis with considerations of dynamic effects. All forms of restrictions limit the flow of exports and so their economic effects are similar. What will be different is the magnitude of the impact, as one moves up in the hierarchy of the restrictive measures (from a tax to ban).

The simplest framework is PE analysis of an export tax for a *small* exporter. Being small, this country's exports do not affect the world market price and thus all effects are limited to that country. The economic effects of a tax will be as follows. It raises the export price for that country and so export is reduced, domestic supply is augmented and domestic price falls, more so for products with price inelastic demand. As a result, in the absence of market failure, consumers gain, producers lose, revenue rises and some efficiency losses are generated. The sum of the gains does not offset the sum of the losses and so the net effect is welfare loss for the economy. This loss, also called efficiency loss, results because there is more than optimal consumption and less than optimal production, both relative to the no-tax benchmark.

A *large* exporter by definition has market power in trade and will impact on the world price. This generates a *terms-of-trade* effect, in addition to the above four gains and losses for a small exporter. Thus, when exports are restricted, the world market price rises, leading to a terms-of-trade gain for the exporter. This gain is the product of the export volume and the incremental change in the world price (additional to the revenue as measured for a small exporter). Unlike that for a small exporter that always incurs a welfare loss, the large exporter could realize a net gain when this terms-of-trade gain more than offsets the efficiency losses. The size of the additional gain will depend on the market power – the ability to raise the world price and still maintain export.

In the process, importing countries experience welfare losses. As their import prices are now higher, they consume less and produce more than optimal (relative to the no-tax benchmark, and assuming no market failure) and thus incur efficiency losses (again net of the changes in producer and consumer surpluses and change in revenue). This is the reason why an export restrictive policy is also called a begger-thy-neighbour policy, and thus an issue of multilateral concern.

Adding together these net gains and losses for the exporter and importers, the overall world static welfare effect of an export restriction is unambiguously negative. This follows from the fact that while the terms-of-trade gain for the exporter is fully cancelled by the terms-of-trade losses for the importers, there remain four triangles of efficiency losses or distortions in global production and consumption.

These are obviously not the reasons why countries do or do not apply export restrictions. There are often other overriding important goals such as price stabilization and income distribution. In these cases, policy makers are obviously assigning different weights to various economic gains and losses, unlike assumed to be equal in the PE analysis.

The above static gains and losses are for the short run. Beyond that period, there will be other adjustments and gains and losses will change. As relative prices change, both consumers and producers adjust their consumption and production levels. A large exporter's market power depends not only on its share of the world export but also importantly on the product's price elasticity of world demand, with greater the benefit captured by the exporter the more inelastic the product. Other factors matter too, such as the degree of market competition and the contestability of markets. As a result, the effectiveness of a restrictive measure dissipates quickly beyond the short run.

What follows illustrates some studies on export restrictions of this nature, i.e. model-based, *ex ante* analysis. There are several such studies, but one quintessential application of the PE modelling framework in the context of the 2007-10 food crisis is a recent OECD study by Thompson and Tallard (2010).

The study was designed to simulate the effects in some future year (2013 was selected) of a food price spike similar to the 2007/08 event. It used the OECD-FAO Aglink-Cosimo global model of world food and agricultural markets. Ten major (large country) wheat and rice producers/exporters or consumers were selected for the sample implementing trade restrictive policies (Argentina, Brazil, Chile, China, India, Indonesia, Russia, South Africa, Ukraine and Vietnam). The trade policy simulated was the implementation by these 10 countries of export restrictions and own tariff reductions triggered when the world prices of rice and wheat surged beyond 35 percent (two other policies were also analysed). The study finds that a given surge of 70 percent in the world prices of wheat and rice (say, due to drought) is amplified to 134 percent for rice and 98 percent for wheat when the 10 countries applied border measures. Most of this amplification must be the result of export restrictions because the scope of tariff reductions is fairly limited. Because the trade policies were triggered only when the world prices rose beyond 35 percent, domestic prices of rice and wheat do rise (i.e. transmitted) in the 10 countries also, by 36 percent and 20 percent respectively for rice and wheat without trade restrictions and by 18 percent and 12 percent with the restrictions. As for the impact on the rest of the world, the policies of the 10 countries lead to reduced consumption of rice and wheat by 4-6 percent in developing countries. This negative impact

is larger if the 10 countries also implement their own consumer subsidy policies, which further limits exports.

There are several other studies on export restrictions using PE models. Deese and Reeder (2007) for example analyse the impact of the changes in the Argentine export tax on soybeans, soybean oil and soybean meal, with 2005 DET structure for the baseline. Taxes are removed separately as well as simultaneously. The results are consistent with the standard analysis for a DET structure. When all three taxes are set to zero, world prices decline by between 12 and 15 percent and exports grow in the 4-6 percent range, about US\$340 million in value term. Dowd (2009) also formulates a PE model to analyse Argentine oilseeds taxation. He computes optimal export tax⁷ on soybeans (that maximizes farmers' profits) to be 25 percent, lower than the then tax rate of 35 percent and significantly lower than the 44 percent rate during the progressive tax regime. Matthey and Cluff (2005) is another application based on the FAO-OECD COSIMO model. Woldie and Siddig (2009) is an interesting application at the national level. Their study simulates the impact of the Ethiopian bans on the export of all grains using a CGE (GTAP) model. They find that domestic prices will fall and the overall welfare implications will be, as said, "devastating", with a welfare loss of US\$148 million. One reason for large welfare losses was the highly inelastic nature of the grains demand. Bouët and Debucquet (2010) is an application for wheat based on general equilibrium model for the whole world. Finally, Nogués (2008) provides an interesting application for Argentina, covering not just grains and oilseeds but also beef. He uses estimates of agro-sectoral growth resulting from the removal of export restrictions (obtained from a general equilibrium model maintained at the World Bank) to simulate the impact on poverty, employment etc. based on parameters from household surveys. The GE results had shown that Argentina's agro-industrial sub-sectors expand considerably when export taxes are removed and as a result there is a significant positive impact on employment and poverty reduction.

Headey (2010) makes a commentary on the limitations of existing models like these for analysing a crisis situation, i.e. to anticipate a surge *ex ante* or to explain the event *ex post*. He notes that modelling a crisis will require different tools and approaches, such as switching models with time-varying parameters and models capable of incorporating more complex behavioural functions such as hoarding, precautionary and "panic" purchases, features that are missing in standard contemporary models.

3.2 Review of selected analyses of the 2007-2010 food crisis

The above review illustrated some studies that were model-based and of an *ex ante* nature. The food crisis and price spikes also generated numerous media stories, op-eds, agency statements and studies. One strand of enquiry has been on the role of export restrictions in the price spikes relative to other factors. A similar attempt was made some years back on the role of biofuels (e.g. Mitchell 2008). Unlike model-based *ex ante* studies, *ex post* analysis is analytically difficult because of the attribution problem as more than one factor is at play at any given time.

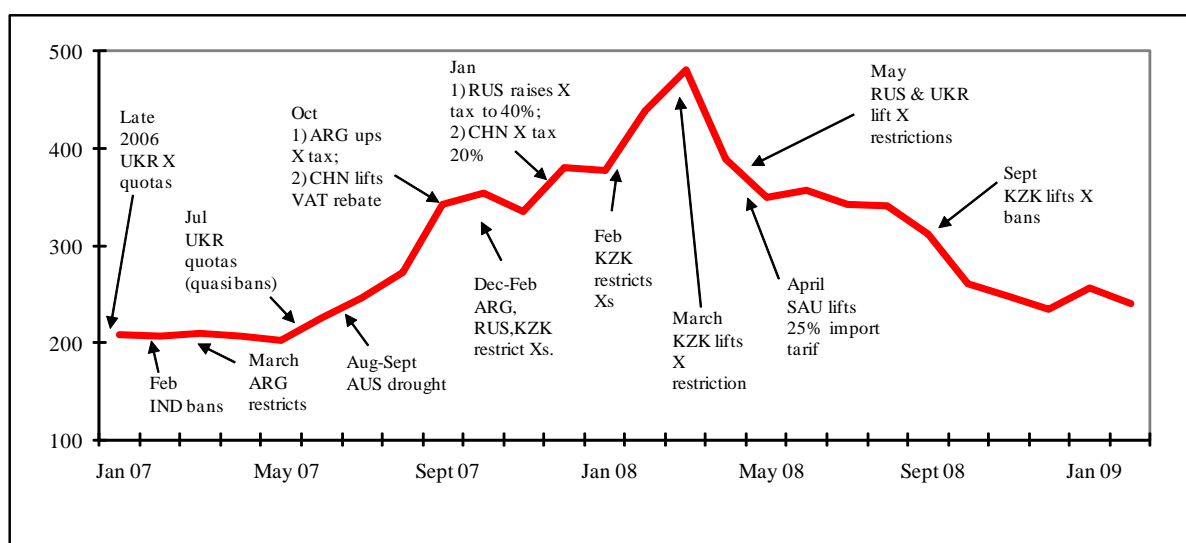
⁷ The optimal tax was computed as $[MS/(\delta + \sigma (1-MS))]$, where MS is Argentine share in the world market (16.2 percent), (1-MS) is share of rest of the world exporters (83.8 percent), δ is price elasticity of world demand (-0.1436) and σ is price elasticity of supply from rest of the world (0.5929). Note that the optimal export tax is directly related to Argentine market share and inversely to supply elasticities of rest of the world and to the world demand.

The consensus among analysts is that weather-related exogenous shock initiated the price surge which was then amplified by export restrictions and other factors, including “panic purchases” (both by importing STEs and hoarding by private agents) and speculative activities in the futures markets. There are some variations to this basic story. For rice, policies are considered to be the dominant factors while supply shocks played a much smaller role. For wheat, both factors were important. Headey (2011), however, has argued that trade events – the short-run trade shocks - were pervasively important in all of the major grain markets (rice, wheat, maize), and even for soybeans through knock-on effects from grains, and so provide the most tangible explanation for the overshooting of food prices during 2007-08. He also notes that the role of trade shocks did not receive as much emphasis in the research literature and media as it should have.

What follows illustrates some analyses undertaken on the food crisis.

One strand of studies sought to identify the role of key contributing factors by superimposing in a graph of time-line of monthly commodity prices during 2007-08 with trade and other policies as well as data on imports and exports (illustrated in Figure 1 for wheat). This helped to visually identify a shock or policy associated with sharp inflections in the price data. Given the scant observations, econometric analysis was out of question. Important works using this method are Slayton (2009), Dawe and Slayton (2011), Brown et al. (2008) and Headey (2011).

Figure 1 - Illustration of an analysis seeking to understand the role of trade and other factors in the price spikes (example for wheat, price in US\$/tonne)



Source: Author’s reconstruction based on Brown et al. (2008), Headey (2011) and additional information.

Slayton’s (2009) paper is titled “a forensics of the rice crisis”. His main conclusion was that the fire (the rice crisis) was man-made and not the result of natural factors. In his analysis, it was the result of political considerations by Indian government leaders seeking re-election, which were compounded by profit-driven choices in Vietnam, and needlessly aggressive buying by the Philippines. Without this “trifecta” of policy decisions, world prices would not have reached the heights that were experienced. Natural causes, such as weather, the strong dollar, high oil prices, etc. played only a supporting role. The paper also discusses some consequences of the crisis on rice policies of importing countries, with some likelihood of the emergence of “food fundamentalism”, i.e. the desire to raise the level of rice self-sufficiency

beyond what is economically optimal. A similar analysis, extended to the end of 2008, and further analysed, is presented in Dawe and Slayton (2011).

Brown et al. (2008) present a similar analysis for wheat and rice. They also superimposed traded volumes and all major policy developments for important exporters and importers, indicating in different colours policy changes that fuelled the spikes (by reducing exports) and those that calmed the spikes (by indicating better crop prospects and exports). They find fairly close and immediate responses of the world market prices to the announcement of the policies. For rice, they also note that G2G sales by India and Vietnam were associated with the easing of the world prices. This, however, remains a debated issue – the other view being is that more G2G arrangements shrink the residual world market and thus adds to volatility.

Headey (2011) provides a similar analysis for all three cereals and soybeans. His main conclusion was that short-run trade shocks were pervasively important in all cases for the three cereals, with knock-on effects on soybeans – hence the view that trade shocks provided the most tangible explanation for the overshooting of food prices. There were also important interactions with factors such as production shocks and stocks. For wheat, he notes that there was a complex causality at work, with droughts, export bans, price rises and demand surges all intermingling with each other, and more difficult to separate the effects.

In addition to that analysis, Headey also provides rough, back-of-the-envelope estimates of the impact of export restrictions on the world price of rice in particular.⁸ Using very inelastic demand and supply values for rice (a SR of -0.15 in the formula), he computed that export restrictions by four covered countries contributed to a 61 percent rise in the world rice price in 2007/08 relative to 2006/07, with respective contributions of 23 percent by India, 20 percent by Vietnam, 10 percent by Egypt and 8 percent by China. Likewise, demand shocks led to a 65 percent price rise with contributions of 27 percent by Bangladesh, 22 percent by energy exporters (Gulf countries, Nigeria), and 16 percent by the Philippines. The sum of the contributions from these two shocks is thus 125 percent, which fell within the price range actually observed from July 2007 to June 2008 (in the 117–149 percent range). For wheat, using the same method but with more elastic parameters, he estimated that the surge in US exports (i.e. intense demand on the US wheat as some other countries restricted exports) contributed to the price rise of around 44 percent. Headey does acknowledge the caveats that come with such a simple, back-of-the-envelope method - yet the method and results are intuitive. He also remarks that his results are broadly consistent with the more sophisticated counterfactual modelling exercise reported in Mitra and Josling (2009) for the Indian export ban (which estimated that export ban could have led to about threefold rise in the world rice price).

Martin and Anderson (2012) also provide similar estimates. Using a reduced form model of global market equilibrium, they find that changes in trade policies contributed substantially to the increases in world prices of rice and wheat. In the 2006-8 surges, such policies (mainly export restrictions, the other policy being import tariff cuts) affecting the market for rice explain 45 percent of the increase in the world price of rice and almost 30 percent for wheat.

⁸ The following formula was used, itself from Timmer's (2009) model of cereal price formation, [$p_t = (b_t - a_t) / SR + p_{t-n}(LR/SR)$], where p is the percent change in price (t is time sub-script), b and a are demand and supply shifters such as export restrictions and panic purchases, SR is net short-run demand response (the difference between the short-run demand and supply elasticities), and LR is net long-run demand response (the difference between the long-run demand and supply elasticities) (the LR part is not relevant for the very short run food crisis analysis).

For 2008, almost half of the 90 percent increase in rice prices observed for that year was explained by trade policy.

Dollive (2008) provides an example of the analysis that shows how regular importers tried to secure food supplies from other exporters when a traditional source restricts exports at a very short notice. In the process, the importers incur not only higher costs but also inconveniences. He reviewed three cases: maize from China; wheat from Ukraine; and wheat from Argentina. These were the types of effects that Israel pointed to at the November 2010 session of the WTO Committee on Agriculture (CoA) as having faced following the Ukrainian restrictions on wheat exports. Indeed, these appear to be the types of consequences that fit the label “taking due consideration of importers’ concerns” in Article 12 of the URAA. Dollive also illustrates a case of cascading effects on the policies of neighbouring countries (e.g. Kazakhstan) following Ukraine’s export restrictions. There were also media reports from some North African countries complaining of the “inconveniences” faced following the “disruption” of supplies from regular exporters. These countries were increasingly relying on wheat from the Black Sea region (in 2008/09, almost 50 percent of Egypt’s wheat came from Russia and 11 percent from Ukraine).

A World Bank study on the impact of Ukraine’s export restrictions illustrates yet another strand of analysis, this time focussed on the exporting country itself (World Bank 2008). The impact was computed using the spread between the export and ex-warehouse prices with and without the restrictions. For wheat, the spread averaged US\$17/t before export quotas in September 2006, US\$85/t after the quota and US\$134 /t when exports were effectively eliminated in July 2007. Given a wheat crop of 13.7 million tonnes, the foregone farm revenue for 2007/08 was roughly US\$1.6 billion for wheat and US\$326 million for barley. A small part of these losses were identified as quota rents and the rest as producer losses that accrued as benefits to the domestic feed and food processing sectors and consumers. The study also noted that almost as the quotas were introduced, the margin between milling wheat and flour prices rose significantly, to the benefit of the milling industry. For sunflower seed, a rough estimate of the loss of farm revenue due to an export tax of 17 percent was put at about US\$660 million for 2007/08 season alone. This loss should have increased subsequently as export quotas replaced the tax.

Other experiences reported include the challenge that several governments in exporting countries faced in managing export quotas. As these were typically set low, quota rents were high, and their distribution becomes difficult and controversial. A somewhat different consequence was reported for Egypt - the emergence of an informal market for export licences when rice export ban was eased in October 2009 allowing private exports provided that the exporter delivered the same amount of rice to the government. In October 2010, monthly tenders were announced for export licences, capped at 100 000 tonnes a month. Given the large gaps between the domestic and export prices, exporters could sell rice very low to the parastatal and still make profits from exports, even after paying the tax. Local prices were pushed down as a result as traders bid low in state tenders so they could secure export licences.

For rice, several country case studies are now available in Dawe (2010a), providing insights to events, policies and market and food security impacts during the crisis. These cover Bangladesh, Indonesia, Philippines, Thailand, Vietnam, Cambodia, China, India, Japan as well as two chapters on the African experiences. Similar country experiences are lacking for wheat and other foods. In addition, policy analysis focussed on specific instruments used

during the crisis, especially the rationale and impacts, would also be valuable contributions to the literature on food crisis/price spikes.

4. Disciplining export restrictions in the Doha Round

4.1 Negotiating proposals and ideas

To start with, a clarification of the term “disciplining” is useful. There are two categories of disciplining being discussed, both in the Doha negotiating proposals and the wider world: i) strengthening URAA Article 12 (information provision, consultations, giving due consideration etc.); and ii) disciplining export restrictions, i.e. doing something to export ban, quota, tax etc. These are often seen as two different agendas, in a way, as alternatives.

Before discussing these two sets of proposals, what follows is a summary of the current GATT/WTO provisions on these issues.

GATT Article XI starts by saying that exports should not be prohibited or restricted with any instrument other than ordinary duties and taxes, which are fully exempted without any limit (for all goods, not just foodstuffs). For foodstuffs, Article XI makes an exception in paragraph 2(a) which states that the above general rule shall not apply to “export prohibitions or restrictions temporarily applied to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting contracting party”. These key words (foodstuffs, temporary, critical shortages, and prevention and relieving of shortages) are not defined anywhere.

In the URAA, Article 12 provisions on export prohibitions and restrictions are limited to information provision, consultations etc. But it is linked to GATT XI, in the sense that the implementation of new export prohibition or restriction on foodstuffs should be “in accordance with paragraph 2(a) of Article XI of GATT 1994”. This implies two things - first, export restrictions on foodstuffs are permitted, and second, the GATT XI requirements need to be observed. These requirements are that the restrictive measures need to be temporary and applied to prevent or relieve critical shortages of foodstuffs. It must be information on these things that the URAA Article 12 called upon export restricting Members to notify to the CoA.

There is obviously a lot to improve on all these as the current state of information provision and consultation is very poor. This is one area for improvement. The other is going beyond what is allowed by GATT Article XI, i.e. actually disciplining export restrictions (e.g. tax, ban). Some Doha negotiating proposals have addressed this issue, and even more so in the wider literature on export restrictions, including in statements from recent high level political meetings.

With this background, what follows summarizes negotiating proposals and ideas, first on disciplining export restricting measures, and then on information provision, notifications etc.

Proposals on disciplining export restricting measures

GATT XI allows export taxation without any limit (taxes not bound) irrespective of the food shortage condition. As all restrictive measures (quotas, MEPs, bans) have their respective tax-equivalents, the freedom to apply a tax up to any level means that an exporter need not even resort to these restrictive measures but only apply very high or prohibitive tax in lieu of quotas or bans. In that case, there is not even the need for meeting the GATT XI requirements

such as the critical shortage requirement nor to notify to the CoA or consult anybody affected as called for in URAA Article 12 or in the new draft Doha texts. This means that disciplining of other restrictive measures without capping export taxes does not mean much.

As regards the Doha negotiating proposals, tariffication of export restrictions and binding was proposed by Japan and Switzerland during the early phase of the negotiations (around 2000-2001). The Japan proposal (G/AG/NG/W/91) called for tariffying all export prohibitions and restrictions by replacing them with export taxes, and binding all those taxes. Switzerland's proposal (G/AG/NG/W/94) went one step further - eliminating all export restrictions and binding export taxes at zero (with flexibility to LDCs). Korea also proposed (G/AG/NG/W/98) prohibiting restrictions as well as taxes, which also implies binding the tax at zero. One idea in the Cairns proposal (G/AG/NG/W/93) was to develop improved disciplines on export restrictions and taxes (no details were given). The other was to preserve Article 12 with SDT provisions. The US (G/AG/NG/W/15) called for strengthening substantially WTO disciplines on export restrictions to increase the reliability of global food supply, but without elaborating on what these would be. It specifically favoured prohibiting the use of export taxes, including DETs, used for competitive advantage or supply management purposes.

These proposals also made some suggestions beyond the binding of the export tax. Restricting export bans is implicit in those proposals calling for tariffication. On top of this, Japan made two additional proposals. One, for products subject to tax, was to establish quotas in which a certain amount of exports - a certain proportion of domestic production – would be exempt from the tax. The second was on emergency measures, i.e. when temporary and short-term export restrictive measures become necessary, exporters are required to clarify, before the taxes are introduced, the disciplines applied on such emergency measures used in order to adjust the volume of exports. These included establishing strict requirements for applying such emergency measures, consulting other Members as a prerequisite for imposing emergency measures, obligating to maintain (during the emergency period) a proportion of export to domestic production at the level of the preceding x years, and limiting the duration of such emergency measures. This reminds of the TRQ system on imports.

The above shows that export taxation was also on the negotiating table. But this was not carried through and the draft Doha texts do not mention anything on export taxation. On the other hand, there is an indication of an intention to address Differential Export Tax, which appears as a heading but within square brackets and without any text (in Part V of the draft texts under *Other Issues*).

Proposals on information provision and consultations

The URAA Article 12 requires that export prohibitions and restrictions are applied in accordance with GATT XI, which means satisfying requirements such as “critical shortage” and “preventing or relieving the shortage”. Once these requirements are met, Article 12 calls for observing the following four provisions while resorting to export restrictions: i) giving due consideration to importers' food security concerns; ii) advance notification to the WTO CoA; iii) consultation with affected importers if asked for; and iv) providing, upon request, with necessary information on the measure. These requirements are exempted for a developing country unless it is a net-exporter of the specific foodstuff concerned, which however is not defined anywhere and so this does not mean anything. Note that GATT XI does not exempt any country from the general rules.

For the Doha Round, the main objective on export prohibitions and restrictions (draft Modalities, paragraph 171) is said to be to modify URAA Article 12 with a view to strengthen GATT Article XI (2a).

There are nine paragraphs with proposals. All proposals are about notifications, information provision and consultations, similar to the URAA Article 12. There are some specific numbers too, e.g. notification of a new measure within 90 days, eliminating existing restrictions by the end of the first year of the new Agreement and 12 months for a new measure to lapse. As for other proposals, the language used gives a sense that the new provisions will be somewhat more demanding than Article 12 on matters like information provision, notification and consultation. Whether it will be different this time than in the past 15 years is of course to be seen. The 90 days requirement for notifying the CoA of a new measure seems to be clearly out of tune with the modern electronic age. As CoA typically discusses issues based only on official notifications, it will most likely be discussing matters that have been discussed by the rest of the world several weeks earlier.

After a gap of many years, an informal paper was circulated on this subject in April 2008 by Japan and Switzerland, presumably prompted by the disruptions caused by export restrictions during the 2006-08 food crisis. This is reviewed in Mitra and Josling (2009). This new proposal does not call for eliminating export taxes and restrictions, but seeks to further tighten requirements on notifications and consultations, beyond what is called for in the draft Doha texts. Thus, new export restrictions are to be justified on the basis of facts such as those on production, stocks and domestic consumption (these seem to be related to the “critical shortage” requirement in GATT XI). Likewise, “due consideration” to importers’ food security concerns would include analysis of how trade would have flowed in the absence of restrictions. Third, notification to the WTO CoA would be required prior to instituting an export restriction – not “within” 90 days as in the draft Doha texts - at the same time explaining the nature, duration and reasons for the measures. Lastly, exporting government is required to consult with importers about “any matter related to the proposed” export restriction, with the implementation of the planned measure stayed pending the consultations. If the differences could not be resolved within a certain period of time, the proposed export restriction would be referred to binding arbitration by a “standing committee of experts.” Thus, the new proposals go much beyond those in the current draft Doha texts.

Notwithstanding this last proposal, going by the draft Doha texts and the fairly similar provisions and language in the URAA Article 12, there remains a question mark on whether the new provisions will significantly discipline export restrictive measures. This will depend to a large extent on things like the timeliness of the notifications and the quality of their information content. The above April 2008 proposal by Japan and Switzerland provides ideas useful for enhancing the information content. To make progress, it is essential first to clarify and define more concretely a number of key words and provisions that remain mostly vague currently. The following is such a list.

1. Defining “temporary” measure
2. Defining “foodstuffs” (e.g. only rice or wheat or rice plus wheat?)
3. Defining “critical” shortage of foodstuffs
4. Defining “preventing” (the critical shortage of foodstuffs)
5. Defining “relieving” (of the critical shortage of foodstuffs)

6. Giving “due consideration” to the effects of export restrictions on importing country’s food security
7. Giving “advance” notification to the CoA and “reasons” on the nature and duration of a restrictive measure
8. Consulting affected importers (what are the modalities for this?)
9. Providing, upon request, with necessary information (also “relevant economic indicators” as said in the draft Doha texts)
10. Listing of net-exporting developing countries for specific foodstuffs (which specific foodstuffs to consider?)

This is a long list of technical (and potentially legal) terms and key words that need to be clarified, and deserves a separate paper.

To summarize this discussion on proposals, the current draft Doha texts do not seek to discipline export restrictive measures as discussed above, but to strengthen URAA Article 12. To do the former, Article 12 would first need to be de-linked from GATT XI and thus remove the cover given to all forms of restrictive measures. As for Article 12 disciplines, these were almost ignored so far, even during 2007-10. To change that for the future would require more concretely defining several terms and key words and other requirements, which means going significantly beyond what are proposed currently in the draft Doha texts.

4.2 Two schemes proposed for disciplining export restrictions

If it is decided that something will be done beyond just strengthening URAA Article 12, the discussion needs to move into concrete schemes. Mere exhortations or statements such as that export bans on foodstuffs should be prohibited, or that countries consider export ban as a last resort after all other measures have failed, are not helpful. Therefore, what follows seeks to contribute to that discussion by proposing two ideas, as alternatives, which are specific schemes or instruments for disciplining export restrictions. The first is a tax-rate quota (TxRQ) and the second is a variable export tax scheme.

A Tax-Rate Quota (TxRQ) scheme

This proposal and the outline of the scheme is based on a number of considerations, or ground realities, some of which were reviewed earlier in the paper.

1. That the fundamentals of the world food market have changed substantially – to an era of high and volatile world prices – is now widely accepted. This is the opposite of the situation that prevailed during the 1980s (structural surpluses and depressed prices, subsidy wars) which led GATT Members to take fairly bold steps to discipline policies responsible for these problems by agreeing to fully prohibit import bans and most other restrictive instruments.
2. There is a considerable support and consensus currently that something needs to be done on export restrictions. It is not just the text books that tell that export restrictions inflict costs to both the exporters and importers but that unpredictable export restrictions were a major factor fuelling the price spikes during 2007-10 are broadly accepted.
3. Besides these justifications, in proposing the schemes outlined below, some other considerations need to be taken into account.

- First, it is unlikely that a drastic move in one go from a situation of total freedom on policies to full export ban will be acceptable. This did not happen on the import side either. The URAA provided significant flexibilities and exceptions in the form of the TRQs, Annex 5 special treatment, liberal latitude to establish bound tariffs and the SSGs. A similar approach will be needed for *beginning* to discipline export restrictions.
- Second, for being acceptable to current users of export restrictions, the new scheme has to have elements of various individual instruments that have been found useful during 2007-10. Section 2 showed that countries have been using combinations of ordinary tax, MEPs, quota and variable taxes in response to different intensities of the price surge.
- Third, export restriction as a trade policy appears to be a well-targeted SDT measure. Barring some cases, developing countries, including LDCs, have been the major users. Given their stage of development, administrative infrastructure and food security/poverty concerns, resorting to export restrictions has been both convenient and practical.

Taking these considerations into account, the approach suggested here for disciplining export restrictions is a scheme similar to the TRQ of the URAA, mirroring the approach that worked in the URAA for imports.

Call it TxRQ or tax-rate quota.

Here, Q, the quota, would be based on past exports, a fixed average for a base period or a moving average, or 75 percent of that if not 100 percent. The in-quota tax could be the average export tax applied in recent years, but no more than 40 percent, which appears to be relatively high for an in-quota rate but this has to be set liberally to sell the idea to start with. The difficult part is fixing the over-quota tax. The process of tariffication for fixing bound rates is a messy and time-consuming work, and so a simpler compromise will be needed. This could be setting the bound rate at twice the in-quota rate, or 80 percent, or about that. If a consensus on this is hard to reach, some further compromises could be considered (e.g. with instruments similar to the URAA's Annex 5 special treatment and SSG), with higher conditionality on "critical shortages", for example. Note that, as said above, without a bound tax, nothing else will work.

A TxRQ scheme would not be a radical departure from current practices, an important consideration as said in the second bullet in point (3) above. Many countries have indeed been mimicking a TxRQ scheme during 2007-10, typically switching from low tax to quotas to high tax, including MEPs. A TxRQ merely formalizes this practice, but giving the much needed predictability to export restricting policy.

An alternative – a variable export tax scheme

An alternative to TxRQ could be a variable export tax scheme, such as those illustrated in Table 3 for palm oil in Indonesia and wheat in Argentina. This instrument has several desirable features: i) it does not block exports altogether; ii) it contributes to domestic price stability; iii) it contributes to revenue; and iv) it provides policy predictability. There are also experiences to learn from schemes that operated or are operating for several years, such as

Indonesian scheme for palm oil and Chile's price band policy on the import side. For agricultural imports, a variable tariff scheme has been judged not to be WTO compatible, following the Chile price band dispute. But there is no reason why such a scheme cannot be considered for exports as a first step towards disciplining restrictive measures. In the concluding chapter of the book *The Rice Crisis* (Dawe 2010b), the discussion on policy options drifts, logically, towards such a scheme, given that discretionary trade policies were a major factor behind the rice crisis. In addition to the above desirable features, implementation cost for this scheme is very low, which is a big plus for many developing countries. Dawe concluded that discussion as follows, "It would seem that some changes in the WTO might be desirable to treat export taxes and import tariffs in a similar manner: the current system discourages predictability and adds to uncertainty in times of crisis" (page 354). Not having a "quota" as part of this scheme could, however, be a drawback, given that quotas were so popular during the food crisis.

5. Summary and conclusions

The 2007-08 food crisis, the price spikes of 2010-11 and the projections of tight food markets and the likelihood of recurring spikes for years to come are indications of a fundamental shift in the world food markets. The experience of 2007-10 shows that export restrictions did play a significant role in fuelling the price spikes. Accordingly, there are growing calls for the multilateral trade rules to address the issues of high and volatile food prices. It is in this context that this paper sought to contribute some ideas towards disciplining export restrictive measures on foodstuffs through the Doha Round. As building blocks to that discussion on trade rules, the paper also reviewed the experience on food export restrictions during 2007-10, covering the incidence of restrictive practices, policy instruments used and studies undertaken on the impact and consequences.

The review in Section 2 of the prevalence of export restrictive measures on foodstuffs showed that almost one-third of the countries for which policy information was collated took such measures during 2007-10. The typical practice was to use more than one instrument, often sequentially as prices swing, as well as in combinations. In general, a more restrictive measure is used when a spike is more pronounced.

Section 3 first presented the standard economics of export restrictions. For a small exporter (with no market power), the impact of a restrictive measure is limited to itself, and net economic welfare is, in the absence of market failures, negative. For a large exporter, the overall outcome could be positive because of the terms-of-trade gains, and the rest of the world suffers welfare loss. When a country resorts to a restrictive measure, there are obviously motives other than maximizing the overall net economic welfare (e.g. price stabilization, income distribution) and the implicit weights assigned to different welfare outcomes are different. This section also reviewed some recent studies on the role of export restrictions during 2007-10 and impacts and consequences. On the whole, the studies agree that while an exogenous shock like a drought started the process, export restrictions played a significant role in fuelling the price rises into spikes. Other factors like aggressive shopping for food imports even when prices were surging (the "panic behaviour") also contributed to the crisis. Overall, policy was also a major factor. This was particularly so for rice.

Section 4 reviewed Doha Round negotiating proposals and other ideas for disciplining export restrictions. Although some proposals were also made for disciplining restrictive instruments (e.g. tax, bans), the draft Doha texts (December 2008 draft Modalities) are limited to strengthening the types of provisions found in the URAA Article 12, i.e. notifications,

information, consultations, etc. Outside of this WTO process, however, there are growing calls for going beyond Article 12 by actually disciplining restrictive instruments. There is thus a strategic choice to be made by negotiators, which is to limit to Article 12 or to go beyond that. In case the second choice is considered, two specific schemes were proposed as alternatives for consideration – a tax-rate quota or TxRQ and variable export tax.

The TxRQ will operate similarly to the URAA's Tariff-Rate Quota (TRQ) on the import side. The TRQ was an important innovation that helped forge compromise and consensus in disciplining import restrictions. The TxRQ is expected to play a similar role on the export side. It combines within it prominent instruments used by export restricting countries during 2007-10, and thus is unlikely to be seen as a radical departure from the current situation.

A TxRQ is made up of in-quota tax, quota and over-quota tax. The in-quota tax could be export taxes applied in recent years, which were generally low, no more than 40 percent. The Q could be based on past exports, fixed for a base period or a moving average. The difficult part is fixing the over-quota tax. As tariffication process is not practical, this has to be negotiated and bound at some reasonable level, e.g. twice the in-quota rate, about 80 percent, or 100 percent at most. Note that GATT XI allows export tax without any limit. This means that the new Article 12 has to be de-linked from GATT Article XI 2(a). It is important to remember that without binding the tax, the disciplining of any other restrictive instrument will not work.

A variable export tax scheme has several desirable features such as not blocking the exports fully, contributing to domestic price stability, generating revenue, predictability for trade and low cost of implementation. Such a scheme has been judged not to be WTO-compatible for imports, but there is no reason why the WTO rules should treat export taxes and import tariffs similarly when the concerns addressed are different.

The alternative to disciplining the restrictive instruments is the *status quo* (URAA Article 12), with further requirements for notifications, information provision, consultations etc. as proposed in the draft Doha texts. The experience so far with the URAA Article 12 has been disappointing and the draft Doha texts do not appear to change things significantly. Making Article 12 effective will require considerable work towards, *inter alia*, clarifying and defining various terminologies and key words in GATT Article XI, URAA Article 12 and draft Doha texts. In Section 4, a total of 10 such key words were listed which remain poorly defined and subject to interpretation. These can be clarified and defined – some of them even quantified – but this has not been done as yet. As it is not practical to write all those details in the legal text itself, it would help to develop an informal reference manual or a “code of conduct” to be used by the WTO CoA and Members for reviewing the notifications and facilitating consultations.

As a last point, export restriction as a trade policy topic is under-researched, unlike the case with import restrictions and market access. The review of the 2007-10 experience shows that policy makers made a considerable amount of experimentation with alternative instruments. In the process, mistakes and losses are inevitable. Towards minimize them, analytical work could focus on understanding the rationale for using specific instruments, both separately and in combinations, and in different contexts (countries, commodities), with a view to identifying and fine-tuning appropriate instruments. There is also much to learn from the experience of other countries.

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Annex 1 - Timeline of export restriction measures (2007 to March 2011)⁹

a) Major exporters/products prominent during 2007-10 food price spikes/crisis

Argentina – wheat and maize

2002 – Export **taxation** since 2002

March 2008 – Until 11 March, **tax** rates were as follows: wheat 28 percent, maize 25 percent, soybeans 35 percent and sunflower seed 32 percent

March 2008 – From 12 March, **sliding scale** or variable export taxes on the above four commodities

March 2008 – Due to sliding scale system, export **taxes** on the two oilseeds increased while those on wheat and maize fell marginally

May 2008 – Despite ban, authorized 100 000 t wheat export to Brazil

June 2008 – Announced monthly export **quotas**

July 2008 - **Sliding scale variable tax** system abolished – fixed taxes as until 11 March 2008

Dec 2008 - Export **taxes** reduced (wheat from 28 to 23 percent, maize 25 to 20 percent)

Sept. 2009 - Export restrictions **lifted** (also for maize) after agreement with exporters and millers to ensure adequate domestic supplies

May 2010 – **Quota** set to allow export = at least 35 percent of 2010 harvest

June 2010 – **Quota** 3.5 million tonnes of wheat for 2010/11 crop (harvest in early 2011)

Nov 2010 – **Quota** of 5 million tonnes from 2010/11 crop

Argentina – oilseeds (soybean, sunseed and oils)

2002 – Export **tax** since 2002

Jan 2007 – **Tax** rates raised: soybean 27.5 percent, soyoil 24 percent; sunseed 23.5 percent and sunoil 20 percent (also on groundnut and oil)

Nov 2007 - **Tax** rates raised as world prices rose: soybean to 35 percent, soyoil 32 percent; sunseed 35 percent and sunoil 32 percent (also on groundnut and oil)

March 2008 – **Variable/sliding tax** introduced; as a result, taxes rose (differential tax or DET remains)

July 2008 - **Variable/sliding tax** system abolished, reverting to fixed taxes as of Nov 2007

August 2010 - Debate on export taxes, with Lower House of Congress for gradual reduction to 10 percent by 2015 and Upper House against

China – cereals and flour

Prior to 2007 - VAT rebate system for grains, flour and other products to encourage export

Dec 2007 – Removed **VAT rebate** of 13 percent for export (rice, maize, wheat, flour)

Jan 2008 – Introduced export **tax** in 5-25 percent range (wheat 20 percent, wheat flour 25 percent, maize, paddy, rice and soybeans 5 percent, flour products 10 percent).

Jan 2008 – Export **quotas** with **licensing**

Nov 2008 – Removed export **tax** on maize, soybeans and maize flour and lowered **tax** on wheat (20 to 3 percent), wheat flour (25 to 8 percent) and rice (5 to 3 percent)

July 2010 – Removed export tax rebate on maize flour

India –Ordinary rice (non-Basmati)¹⁰

9 October 2007 - **Ban** exports

31 October 31, 2007 - **Ban** lifted and replaced with **MEP** of US\$425/t fob

December 2007 - **MEP** raised to US\$500/t

⁹ Information as of March 2011. This is a non-exhaustive listing of such measures taken by many countries around the world. It is compiled from many different sources, including media reports, and so there might be errors and omissions, but these should be representative enough for illustrating the overall pattern.

¹⁰ Note that despite the bans, there have been exports to neighbouring countries under the G2G deals.

5 March 2008 - **MEP** raised to US\$650/t
27 March 2008 - **MEP** raised to US\$1 000/t
1 April 2008 - **Banned** export
September 2009 – **Ban** extended
Feb 2010 – **Ban** continued except for 3 premium varieties with US\$800/t **MEP** and **quota** of 150 000 t for MY 2010/11.
July 2010 – Decided to continue the **ban**.

India – Basmati rice

8 March 2008 - **MEP** of US\$950/t applied
27 March 2008 - **MEP** raised to US\$1 100/t
1 April 2008 - **MEP** raised to US\$1 200/t
29 April 2008 - Export **tax** of Rs. 8 000 /t (≈US\$200) applied
January 20, 2009 - **Tax** removed and **MEP** reduced to US\$1 100/t
September 2009 - **MEP** reduced to US\$900/t
Feb 2010 - **MEP** of US\$900/t continues

India – wheat

February 2007 – Export **ban** on wheat and products until end December 2007
October 2007 – Feb 2007 **ban extended** indefinitely
July 3 2009 – Export **quota** of 3 million tons through STEs
July 13 2009 – July 3 quota withdrawn and full export **ban** re-imposed
May 2010 – Export **quota** of 650 000 t for one year

Egypt – rice

2007 – Export **tax** imposed
March 2008 - **Ban** announced for until October 2009
July 2009 – Lifted **ban** and introduced export **tax** of EGP 300/t (US\$54); subsequently reduced to EGP 100 (US\$18)/t.
Feb 2009 – Lifted export **ban** if same volume of rice delivered to STE
Feb 2009 – At the same time, raised export **tax** from EGP300 to EGP1 000
Oct 2009 – **Ban** announced and extended to October 2010 (broken rice excepted)
Oct 2009 – Monthly export **quotas** announced through tenders (license) - 400 000 to 600 000t considered for 2009/10
Jan 2010 – Announced continuation of above policy

Pakistan - rice

April 2008 – Announced **MEPs** on four grades (super basmati US\$1 500/t, basmati US\$1 300/t, long-grain (IRRI-9) US\$1 000/t and broken (IRRI-6) US\$ 750/t)
Oct 2008 – Removed **MEP** on Basmati rice

Pakistan – wheat

2007 – Imposed export **tax**
Oct 2009 – Removed **tax** of 35 percent
Dec 2009 - **Ban** on wheat export
April 2010 – **Quota** on wheat export 2 million t.
August 2010 – Deferred April 2010 **quota** plan (2 m t) due to floods
Dec 2010 – Lifted 3-year export **ban without** quota of 1 million tonnes

Russia – wheat and barley

November 2007 – Export **tax** of 10 percent (wheat and barley)
December 2007 – Raised **tax** to 40 percent on wheat) and 30 percent on barley and maintained till May 2008
Feb 2008 – Raised **tax** on wheat and barley by 40 percent 30 percent respectively
April 2008 - **Ban** on wheat exports to Belarus and Kazakhstan (customs union - fearing deflection)

August 2010 – Export **ban** announced for grains (wheat and flour, maize, barley, rye and flour) for until end December)

Feb 2011 – Reports that the **ban** may be extended beyond July 2011

March 2011 – **Ban** to remain until September 2011

Russia – rapeseed – subject to export **tax** since 2001 to encourage domestic processing and adjusted from time to time (15-20 percent range). In August 2010, there was a news that tax may be lifted as crushing industry growth is saturated.

Ukraine – wheat and other grains

Sept 2006 – Export **licensing** introduced for wheat and wheat-rye mix

Oct 2006 - Export **quotas** introduced (wheat, maize, barley, rye) for until Dec 2006

Dec 2006 – New **quotas** for Jan-June 2007 (wheat sharply reduced)

Feb 2007 – **Quotas** cancelled for maize and barley

May 2007 – **Quotas** cancelled for wheat

June 2007 - **Quotas** re-introduced for Jan-Oct 07, but very small amounts (exports quasi-banned)

Sept-Oct 2007 - **Quota** regime extended to end 2007

Nov 2007 – **Quotas** announced for Jan-March 2008, substantially raised (wheat, maize, barley)

March 2008 - **Quotas** extended to April for wheat and barley

March 2008 - **Quotas** abolished for maize from April (but license required)

April 2008 - **Quotas** for maize and barley substantially raised (until July 2008)

2009-10 MY (July-Aug) - Grain policies relatively liberal with no export bans or restrictions

May 2010 – Removed **quota** restrictions on grain exports

August 2010 – Announced export **quotas** after Russia announced bans (quotas: maize 2 m t, ½ m t of wheat, ½ m t of barley)

October 2010 – **Quotas** set for until end-2010 (total 2.7 million tons, including ½ mln tons wheat, 2 mln tons maize, and 200 000 tons barley)

December 2010 – Wheat **quota** doubled to 1 mln t and maize from 2 to 3 mln t) and extended to end March 2011

March 2011 – Increased maize **quota** by 2 mln to 5 mln t and extended quota to until 1 July 2011

March 2011 – Debates going on about replacing quotas system with export **tax**

Vietnam - rice

July 2007 – Export **ban** for rest of 2007

January 2008 – Export target set (4.5 m t for a year) and **MEPs** (US\$385 for 5 percent broken, US\$360 for 25 percent broken) [VFA informally told no sales of 25 percent broken]

March 2008 – Total export quota reduced and **quarterly quotas** set

March 2008 – **No new** export **contracts** unless exporter is holding as stocks 50 percent of export sales

June 2008 – Export **ban lifted** and **MEP raised** to US\$800/t for 5 percent broken (from US\$400) set April 2008 -

July 2008 – **Progressive export tax** US\$30/t for export price of US\$600/t and maximum tax of US\$175/t for price =>US\$1,300/t

April 2009 – **MEPs** reduced 25 percent broken rice to US\$350/t

August 2010 – **MEPs** raised three times by US\$50/t (US\$450 for 5 percent, US\$410 for 25 percent)

Sept 2010 - **MEPs** raised to US\$475 for 5 percent and US\$435 for 25 percent

October 2010 - **MEPs** unchanged

Dec 2010 - **MEPs** raised to US\$540 for 5 percent and US\$480 for 25 percent

b) Other countries/cases

Africa

Chad - export ban on female **cattle** (Feb 2010)

Ethiopia – Export ban **cereals** (May 2008, removed July 2010)

Guinea - Export ban on **agricultural products** (April 2008)

Kenya – Banned **maize** export (Oct 2008)

Malawi - Export ban on **maize** removed (Sept 2009)

Tanzania – **Cereal** export ban (imposed Jan 2008, lifted April 2010)

Zambia – **Maize** export ban (March 2008, lifted Oct 2009)

Asia/Central Asia/Near East

Bangladesh - Six months ban on export of **soybean oil** and **palm oil** for 6 months (April 2008); **rice** export ban (Nov 2008, lifted Sept 2009, re-imposed Dec 2009 and on Jan 2010 re-extended for until June 2010). In June 2010, extended ban of all rice varieties for further 6 months to Dec 2010

India

Maize exports channeled through **STE** for six months (March 2007) and **banned** for 3 months (July- October 2008)

Ban on pulses since 2009 (expected to remain so until end 2011)

Cambodia – Export ban on **rice** (May 2008)

Jordan – Export ban on **fresh vegetables** and **eggs** (May 2008)

Kazakhstan

Export **ban** on wheat (April 2008, lifted Sept 2008)

Suspended transportation **subsidy** for **fruits and vegetables** (May 2008, reactivated Sept 2008)

Ban on soybeans, sunseed and oils of these and rape (October 2010)

Myanmar – Banned **rice** export (July 2008, lifted Nov 2008)

Nepal – Export ban on **rice, maize, wheat** (April 2008); 35 percent export tax on **wheat products** (May 2008); export ban **pulses** (July 2009; lifted Nov 2009)

Sri Lanka – MEP US\$923/t) on **rice** export (June 2008)

Syria - Export ban on **wheat-based products** and **food legumes crops** (August 2008)

Latin America

Bolivia – Export ban on **soya** and **sunflowers oil**, raw and refined (May 2008); lifted ban on **maize** export (Oct 2008); ban on **maize** and **sorghum** export (Feb 2010); ban on **sugar** export (Feb 2010)

Ecuador – Ban on **rice** export (June 2006, lifted March 2009)

Honduras – Export ban lifted on **beans** and **maize** (October 2010)

Europe

Belarus – 40 percent export tax on **wheat and meslin** (June 2008); variable export duty on rapeseed (July 2010) and export ban in Sept 2010

Serbia - Ban on **grain** exports (August 2008)