

Putting Differentiation into Practice:

The Case of Food Security

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1 Introduction

Constantine Michalopoulos makes the point in relation to agriculture that there is neither an economic nor a political case to treat all developing countries in the same way. Countries such as Argentina and Brazil are clearly highly competitive and parts of their agricultural sectors are well developed. Their needs for support and assistance are very different from those of, say, Kenya, Ghana and Botswana. Yet all five states fall into the same catch-all World Trade Organization (WTO) category of developing country. It is politically unrealistic (and arguably not desirable) for the industrialised countries to offer to Cairns Group members flexibilities on WTO disciplines that would be justified (and *might* be offered) to Kenya or Ghana.

Claire Melamed has described the question of which countries might be eligible for special and differential treatment (SDT) in future as 'one of the main stumbling blocks in the current debate on SDT'. There is stalemate because the industrialised countries justify their unwillingness to make significant SDT offers on the grounds that they would apply to all developing countries, while the latter admit to a willingness to consider differentiation only after significant SDT has been offered.

This impasse means that there does not exist, even in embryonic form, a set of potential SDT measures for which appropriate country/socio-economic groupings could be proposed. Instead, the two processes – of fashioning appropriate SDT and identifying groups with special needs – must proceed in parallel in the hope that, in due course, they can be fused.

The article by Constantine Michalopoulos focused particularly on the first process; this article contributes to the second. The problems of *country* classification can be reduced if SDT can be concentrated on appropriate socio-economic groups (such as poor farmers or vulnerable groups) or on particular commodities (such as staple foods). But, as Constantine Michalopoulos points out, there is a limit to how much differentiation can be achieved in this way. It seems inevitable that, in part, the negotiation will have to grasp the nettle of deciding whether or not some *states* have more claim to flexibility than others. This article examines one aspect: how to identify "food-insecure states".

2 The concept of “national” food security

The answer to the question “which states are food insecure?” is not obvious, since it is *people* not countries that are normally considered to be food secure or insecure. How can concepts and measures that have been developed in relation to individuals be applied to states? Is the prevalence of food insecurity best indicated by poverty indicators (like gross domestic product (GDP) per head), or are there countries that are especially food insecure even though they are not necessarily the poorest? Having identified states that are food insecure, what practical modulation of current, or likely future, WTO commitments does this status justify? Do they need less onerous subsidy restrictions, or priority food and financial assistance outside the WTO, or something else again?

2.1 Creating an analogy with individuals

If an analogy is made to the analysis of individuals following Sen (Drèze and Sen 1990), the food security of a state could be said to depend upon:

- its production entitlements, which reflect the food that can be produced domestically;
- its trade entitlements, which reflect its ability to earn sufficient foreign exchange with exports (agricultural or non-agricultural) to purchase imported food, and
- its transfer entitlements, which cover food that can be obtained either directly through food aid or indirectly by (semi-)commercial imports financed through financial aid or industrialised country export subsidies (see Stevens *et al.* 2000).

This suggests that the most food-insecure states are those that combine insufficient domestic production to ensure the entitlements of all the population with an export structure (not necessarily just for agriculture) that is unsatisfactory in terms of one or more of the following characteristics:

- low *per capita* value and poor growth prospects;
- heavy dependence upon a small number of commodities facing fluctuating supply or demand;

- heavy reliance of exports on a single market with fluctuating demand.

It follows that it is the combination of characteristics that is important. Neither low GDP nor dependence upon imported food are, by themselves, necessarily indicators of national food insecurity. Some modest importers could be more insecure than larger importers – their low imports indicate not an adequacy of domestic production but an inadequacy of foreign exchange with which to finance greater imports!

Another corollary is that the Agreement on Agriculture is not the only WTO text that is relevant to the issues raised by national food insecurity. How much insecurity is created by the Multifibre Arrangement (MFA) or, as Constantine Michalopoulos points out, the application of sanitary and phytosanitary standards?

2.2 Applying the analogy to the World Trade Organization

How well does existing WTO usage and terminology capture this combination? The answer is ‘not very well at all’. Within the WTO the term “food security” is used in a very narrow sense and relates primarily to the adequate supply of imported food to member states. This usage reflects concern raised during the Uruguay Round that the liberalisation of world agricultural trade would lead to a rise in world prices for commercial imports and a reduction in the volume of food aid.

Some 22 states are recognised as net food-importing developing countries (NFIDCs),¹ and the 49 least developed countries also receive special attention. The NFIDC category is particularly questionable as a basis for identifying food insecurity as defined in this article. Only one NFIDC (Kenya) falls among the 30 countries with the lowest calorie availability (a fairly robust proxy for food insecurity), and three of those 30 are neither least developed nor NFIDC (UNDP 2000: Table 23).

The least developed country group comes closer to satisfying the broad criteria of food insecurity. All have a low level of production and limited economic diversification. But restricting differentiated treatment just to least developed countries would

Table 1: Potential areas of concern over new agricultural trade rules

Rules on	Potential legitimate concerns in
Lowering import controls	Countries aiming to increase domestic agricultural production Food-importing states
Reducing export subsidies	Food-importing states
Reducing domestic subsidies	Countries aiming to increase domestic production

represent a substantial retreat of SDT. A reasonable working assumption is that there exist some non-least developed countries that are food insecure – but how are they to be defined in a way that commands respect? Some focusing will be necessary. An operationally effective definition is needed to allow modulation of those WTO rules with greatest food security implications.

How could the existing definitions be developed given that, in one sense, almost all aspects of the WTO may have food security effects? It is hard to imagine a consensus emerging among WTO members for substantial and enforceable SDT treatment to all states satisfying such broad criteria unless it was restricted to the very poorest and smallest states. Hence, a part (but preferably not the totality) of SDT related to food insecurity will need to be located within the Agreement on Agriculture.

A first step establishing the criteria for membership of a food-insecure group of states is to identify the areas of WTO rule-making in the Agreement on Agriculture that might be problematic, and why. This is done in the next section. Then, an initial illustrative analysis is made of criteria that are relevant to such concerns and of the range of countries captured by various thresholds.

3 Modulating commitments

A precise identification of appropriate new SDT measures cannot be provided until there exists some greater understanding of the new rules likely to be adopted in the Agreement on Agriculture negotiations. But there is an expectation that the new Round will cover all three of the main elements of the Agreement on Agriculture “architecture”: market access, export subsidies and domestic subsidies. Any tightening of rules in these three areas will tend to cause concern in different groups of states. These are set out analytically and discussed in Table 1.

3.1 Market access

The market access concerns of food-insecure developing countries will be largely focused on any obligations they accept in relation to their own barriers against imports rather than on changes to industrialised country market access (but with one exception). Many insecure countries either export primary commodities that face low barriers in Organisation for Economic Cooperation and Development (OECD) markets or, if they do not, they have preferential access to protected markets.

For those exporting non-sensitive products, OECD liberalisation is unlikely to result in any significant change. And, arguably, developing country liberalisation is likely to be less important in stimulating world demand for their exports than is developing country growth.

For countries with preferential access for sensitive products, preference erosion is likely to affect trade entitlements, but the main arena in which the pace of erosion is set is that of the importing countries rather than the WTO. Although multilateral liberalisation will erode (and eventually remove) preferences, it is unlikely that the current WTO Round will take more than one, modest step in this direction (for which remedies may be available through bilateral negotiation). For example, the European Union (EU) currently offers preferential tariff quotas on beef to Southern African exporters, the value of which will be eroded by reductions in EU beef prices (resulting from reform of the Common Agricultural Policy already adopted and, possibly, from future changes agreed in the WTO). The adverse effects of this could be reduced by increasing (or lifting entirely) the tariff quotas.

The main “exception” of countries with a keen eye on industrialised country market access are those in which food imports represent a significant element in total supply and which have fragile trade

entitlements. To the extent that the Doha Round contributes to a decline in production in the most heavily protected markets (mainly the OECD), it will tend to increase world prices. An increase in world prices will tend to result in an adverse movement in the terms of trade of food-importing developing countries. This could have an impact on food security for those with limited opportunities to boost exports or to increase domestic production.

3.2 Export subsidies

Such countries will be affected more directly by curbs on the export subsidies currently provided by a small number of OECD states. These could have an immediate impact on world prices which would persist at least until the exports of non-subsidisers bounce back from their current, artificially depressed, levels to take advantage of the new opportunities. Even then, there could be a lasting effect on trade entitlements.

These potential longer-term effects could arise from the displacement of exports from subsidisers to non-subsidisers. This could lead to a reduction in the availability of imports to very poor countries, even if world prices do not remain raised, to the extent that they currently receive food aid or so-called “grey” imports (that do not qualify as food aid, but are sold at below market prices) from a subsidising state. There is no reason to suppose that the increase in exports from non-subsidisers will be made available to the same poor countries and on the same terms as the concessional exports that they replace.

3.3 Domestic subsidies

Countries in which there is an objective need to boost domestic agricultural production will also be concerned by any new WTO rules that limit the scope for domestic subsidies. As Constantine Michalopoulos shows, few developing countries have been able (or willing) to provide subsidies for agriculture that come anywhere close to the current limits. Hence, the current restrictions have not been constraining. But a further tightening of such limits might cause difficulties for some states. Moreover, as Constantine Michalopoulos argues, the signal being sent out to these countries from the WTO is the complete opposite of the message that should be conveyed.

4 Identifying groups

There are thus two (possibly overlapping) categories of countries that might be affected in different ways by change to the three principal elements of the current Agreement on Agriculture architecture. These are:

1. Countries aiming to boost domestic agricultural production that may wish to increase incentives to farmers by keeping import prices high and increasing domestic subsidies.
2. Food-importing states with weak trade entitlements that may be concerned about their capacity to import sufficient food in future.

4.1 Relevant indicators

What indicators exist to identify the countries that would be most vulnerable to such changes?² At present there exist the least developed country group, which *may* equate to the first category of states, and the NFIDC group, which is focused on the concerns of the second category. But these are not sufficient. Several attempts are being made to develop further a set of operational categories (see, for example, Diaz-Bonilla *et al.* 2000). Given the uncertainties over the negotiations (both with respect to new rules and to SDT) it is desirable that this research pluralism continues. This article contributes to the process.

An analysis of the types of indicator that might be relevant is provided in Table 2. This takes the two categories of countries identified in Table 1 and lists for each some illustrative indicators.

- One group consists of those countries in which agriculture is an important source of livelihoods but production is low (where a legitimate emphasis of policy is to boost agricultural production – a task that might be made more difficult by curbs on import controls or domestic subsidies).
- The other consists of those countries that are dependent on imports for a significant part of domestic consumption but have weak trade entitlements (and which would be vulnerable, therefore, to sudden increases in world prices).

Table 2: Relevant indicators for special and differential treatment

Characteristics of country	Possible indicator
Agriculture is important source of livelihoods but production is low	High share of agriculture in GDP Low <i>per capita</i> calorie supply
Import dependence with weak trade entitlements	High food imports as share of GDP High vulnerability Low <i>per capita</i> calorie supply

In both cases, it is a combination of characteristics that indicates particular vulnerability. For the first group a necessary condition is that agriculture should represent a relatively high proportion of GDP. But reliance on this as the sole criterion would include wealthy countries and those with sufficient non-agricultural production that they can easily assure the food security of their populations. An additional criterion suggested in the table, therefore, is that average *per capita* calorie supply should be low. Alternative indicators can easily be identified and, even if the one suggested finds favour, it would be prudent to take a multi-year average. But the present exercise is intended as an illustration of a methodology, not a definitive exercise.

Similarly, a high share of food imports in GDP is a necessary criterion for establishing import dependency but not a sufficient one. Low *per capita* calorie supply will indicate which among such countries have substantial vulnerable populations.

On top of these, some indicator is required of a country's weak trade entitlements. An off-the-peg indicator is the composite vulnerability index compiled under the auspices of the Commonwealth Secretariat.³ This is used in the following illustrative application of the criteria. But, like all of the indicators used, alternatives could be identified (and would lead to different group memberships).

What type of country groups are thrown up by the criteria trialled in this article? And how great is the overlap with the existing least developed and NFIDC groups? The next two sections show what happens when an attempt is made to identify a coherent group of countries, which have the optimum combination of characteristics.

4.2 Calorie supply: the basic indicator

We start with *per capita* calorie supply, which is suggested as the fundamental criterion. The Food and Agriculture Organisation (FAO)/World Health Organisation (WHO) recommended minimum level is 2,300 calories per day. Since there will be substantial variations between consumption levels within a country it is unrealistic to characterise as low calorie availability only those countries with an average *per capita* supply of less than this level. On the other hand, it would be inappropriate for WTO rules to give special consideration to countries just because they have highly unequal consumption patterns. A threshold of an average *per capita* calorie supply of 2,500 has been taken as an initial indicator to illustrate the range of countries that would be brought in by such a threshold. It allows for a limited degree of unequal calorie availability within a country.

Table 3 presents the 72 countries for which data are available that have an average *per capita* daily calorie supply of less than 2,500 in ascending order of calories. It also indicates whether or not the countries are classified as least developed (LDC) or NFIDC.

It is evident that there is a weak correlation between least developed and NFIDC states and *per capita* calorie supply. The two categories cover some, but not all states with low calorie supply. Twenty-five of the countries fall below the 2,500 calorie threshold, but are neither least developed nor NFIDC. Hence, under current WTO country classifications, they would be excluded from SDT unless it were also available to Argentina, Brazil or Kuwait.

Moreover, a further four states are classified as least developed but have a *per capita* calorie supply in excess of 2,500 (and range from Mauritania with 2,622 to Cape Verde with 3,015). Twelve NFIDC

Table 3: Average *per capita* calorie supply

Country	Daily <i>per capita</i> calorie supply ^a 1997	LDC	NFIDC ^b	Country	Daily <i>per capita</i> calorie supply ^a 1997	LDC	NFIDC ^b
Eritrea	1,622	Yes		Nicaragua	2,186		
Burundi	1,685	Yes		Papua New Guinea	2,224		
Congo Dem. Rep.	1,755	Yes		Guinea	2,231	Yes	
Mozambique	1,832	Yes		Azerbaijan	2,236		
Comoros	1,858	Yes		Lesotho	2,243	Yes	
Ethiopia	1,858	Yes		Dominican Rep.	2,288		Yes
Haiti	1,869	Yes		Peru	2,302		Yes
Angola	1,903	Yes		Sri Lanka	2,302		Yes
Mongolia	1,917			Turkmenistan	2,306		
Zambia	1,970	Yes		Venezuela	2,321		Yes
Kenya	1,976		Yes	Guatemala	2,339		
Tanzania	1,995	Yes		Gambia	2,350	Yes	
Tajikistan	2,001			Thailand	2,360		
Central African Rep.	2,016	Yes		Antigua/Barbuda	2,365		
Madagascar	2,021	Yes		Philippines	2,366		
Mali	2,029	Yes		Nepal	2,366	Yes	
Chad	2,032	Yes		Armenia	2,371		
Sierra Leone	2,035	Yes		Sudan	2,395	Yes	
Malawi	2,043	Yes		Honduras	2,403		Yes
Cambodia	2,048	Yes		Senegal	2,418	Yes	
Yemen	2,051	Yes		Guinea-Bissau	2,430	Yes	
Rwanda	2,056	Yes		Panama	2,430		
Djibouti	2,084	Yes		Uzbekistan	2,433		
Bangladesh	2,085	Yes		Bahamas	2,443		
Uganda	2,085	Yes		Croatia	2,445		
Niger	2,097	Yes		Kyrgyzstan	2,447		
Lao PDR	2,108	Yes		Togo	2,469	Yes	
Cameroon	2,111			St Vincent	2,472		Yes
Burkina Faso	2,121	Yes		Pakistan	2,476		Yes
Solomon Islands	2,122	Yes		Cuba	2,480		Yes
S.Tome/Principe	2,138	Yes		Swaziland	2,483		
Congo Rep.	2,143			Vietnam	2,484		
Zimbabwe	2,145			Maldives	2,485	Yes	
Bolivia	2,174			Benin	2,487	Yes	
Namibia	2,183			Seychelles	2,487		
Botswana	2,183		Yes	India	2,496		

^a Amount available for human consumption. *Per capita* supply represents the average supply available for the population as a whole and does not necessarily indicate what is actually consumed by individuals.

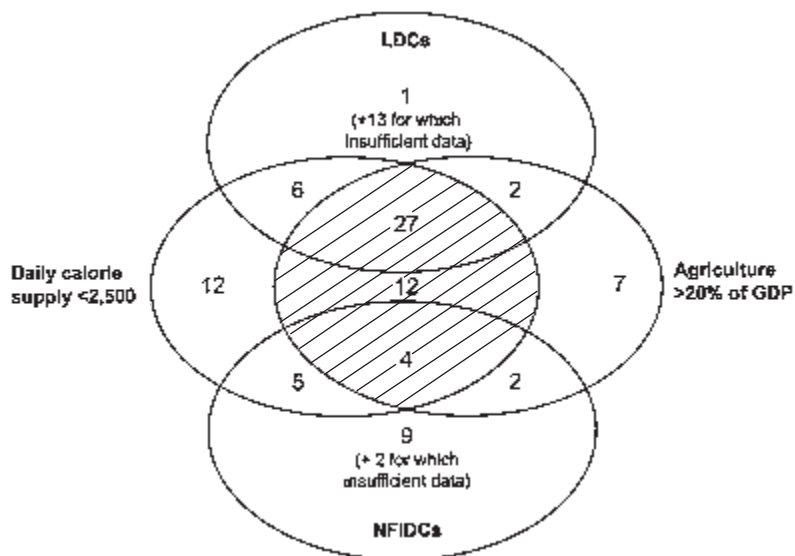
Source: UNDP (2000): Table 23.

^b Source: WTO (2002).

states have a calorie supply in excess of 2,500, ranging up to 3,287 (Egypt). Hence the least developed and NFIDC categories combined cannot

be used as an adequate indicator of food insecurity: they exclude many countries that have lower calorie availability than do some group members.

Figure 1: Overlap of indicators of agricultural dependence



4.3 Indicators of agricultural dependence

As suggested above, the sources of vulnerability need not be agricultural, but at least part of the relevant SDT is likely to fall within the Agreement on Agriculture. To identify those states in which the food insecurity may be *agriculture related*, Table 4 brings in information on agricultural value added as a share of GDP. It shows the share of agriculture in GDP for all of the states with a *per capita* calorie supply of under 2,500 (excluding six for which data are unavailable) and also any other developing country where agriculture accounts for more than 20 per cent of GDP. Those countries in the table that are neither least developed nor NFIDC but in which average calorie supply is below 2,500 are indicated by shaded lines.

The least developed and NFIDC categories appear to overlap only to a limited extent with these other criteria of vulnerability. No fewer than 30 of the 76 countries in the table are neither least developed nor NFIDC, and 18 of these have an agricultural sector that accounts for over 20 per cent of GDP. They include several transition economies (which are ignored as a group by the existing WTO country classification) as well as a range of developing countries including Vietnam, India, Cameroon and Guatemala.

The overlap between these criteria (and the least developed and NFIDC groups) is illustrated in Figure 1. This shows the following:

- Forty-three states (of which 27 are least developed and four NFIDCs) share the criteria of a daily calorie supply of less than 2,500 and agriculture accounting for more than 20 per cent of GDP.
- There are a further 23 countries (six of which are least developed) in which daily calorie supply is less than 2,500 but agriculture is less than 20 per cent of GDP.
- Apart from the countries for which data are unavailable, only one least developed country (but nine NFIDCs) falls outside the central focus of the analysis.
- If special preferences were to be given to all least developed countries plus non-least developed with agriculture exceeding 20 per cent of GDP and a daily calorie supply of less than 2,500, then 26 countries that have one criterion but not the other would be excluded (17 states with daily calorie supply of less than 2,500 but a small agricultural sector, and nine countries with a large agricultural sector but a daily calorie supply exceeding 2,500).

Table 4: Agricultural dependence and low-calorie status

Country	Daily per capita calorie supply ^a 1997	Agric. value added share of GDP ^c 1998	LDC	NFIDC ^b	Country	Daily per capita calorie supply ^a 1997	Agric. value added share of GDP ^c 1998	LDC	NFIDC ^b
Guinea-Bissau	2,430	62.4%	Yes		Georgia	2,614	26.0%		
Albania	2,961	54.4%			Côte d'Ivoire	2,610	26.0%		Yes
Burundi	1,685	54.2%	Yes		Vietnam	2,484	25.8%		
Myanmar	2,862	53.2%	Yes		Paraguay	2,566	24.9%		
Lao PDR	2,108	52.6%	Yes		Mauritania	2,622	24.8%	Yes	
Central African Rep.	2,016	52.6%	Yes		Turkmenistan	2,306	24.6%		
Cambodia	2,048	50.6%	Yes		Papua New Guinea	2,224	24.4%		
Ethiopia	1,858	49.8%	Yes		Guatemala	2,339	23.3%		
Rwanda	2,056	47.4%	Yes		Guinea	2,231	22.4%	Yes	
Mali	2,029	47.0%	Yes		Bangladesh	2,085	22.2%	Yes	
Kyrgyzstan	2,447	46.0%			S. Tomé/Príncipe	2,138	21.3%	Yes	
Tanzania	1,995	45.7%	Yes		Sri Lanka	2,302	21.1%		Yes
Uganda	2,085	44.6%	Yes		Azerbaijan	2,236	20.3%		
Sierra Leone	2,035	44.2%	Yes		Honduras	2,403	20.3%		Yes
Cameroon	2,111	42.4%			Dominica	3,059	20.3%		Yes
Togo	2,469	42.1%	Yes		Zimbabwe	2,145	19.5%		
Niger	2,097	41.4%	Yes		Yemen	2,051	17.6%	Yes	
Nepal	2,366	40.5%	Yes		Senegal	2,418	17.4%	Yes	
Chad	2,032	39.8%	Yes		Zambia	1,970	17.3%	Yes	
Sudan	2,395	39.3%	Yes		Philippines	2,366	16.9%		
Comoros	1,858	38.7%	Yes		Maldives	2,485	16.4%	Yes	
Benin	2,487	38.6%	Yes		Swaziland	2,483	16.0%		
Malawi	2,043	35.9%	Yes		Bolivia	2,174	15.4%		
Guyana	2,530	34.7%			Angola	1,903	12.3%	Yes	
Mozambique	1,832	34.3%	Yes		Dominican Rep.	2,288	11.7%		Yes
Nicaragua	2,186	34.1%			Congo Rep.	2,143	11.5%		
Burkina Faso	2,121	33.3%	Yes		Lesotho	2,243	11.5%	Yes	
Armenia	2,371	32.9%			Thailand	2,360	11.2%		
Mongolia	1,917	32.8%			St Vincent	2,472	10.9%		Yes
Nigeria	2,735	31.7%			Namibia	2,183	10.0%		
Uzbekistan	2,433	31.2%			Croatia	2,445	8.9%		
Madagascar	2,021	30.6%	Yes		Panama	2,430	7.9%		
Haiti	1,869	30.4%	Yes		Peru	2,302	7.1%		Yes
India	2,496	29.3%			Tajikistan	2,001	5.7%		
Moldova	2,567	28.9%			Venezuela	2,321	5.0%		Yes
Gambia	2,350	27.4%	Yes		Seychelles	2,487	4.1%		
Pakistan	2,476	26.4%		Yes	Antigua/Barbuda	2,365	4.0%		
Kenya	1,976	26.1%		Yes	Botswana	2,183	3.6%		Yes

^a Amount available for human consumption. *Per capita* supply represents the average supply available for the population as a whole and does not necessarily indicate what is actually consumed by individuals.
Source: UNDP (2000: Table 23).

^b Source: WTO (2002).

^c Source: World Bank, *World Development Indicators* database website.

5 Negotiating differentiation

All attempts to introduce sub-groups of WTO members will be politically fraught although, as Claire Melamed argues, there appears to be a wider developing country acceptance of the inevitability of this corollary of significant new SDT than is indicated in their public pronouncements. A modest contribution to this generic problem is made in the final article of the *Bulletin*. But, putting aside this major issue, what forms of differentiation might answer to the characteristics of the groups identified above, and what agricultural trade issues might arise in the negotiations? Different answers are required for the groups identified in the top and in the bottom rows of Table 2, where agriculture is important but sickly, and where import dependence is combined with weak trade entitlements.

5.1 Relief from obligations

The SDT required for the first group would avoid the rules designed primarily to erode the substantial distortions caused by OECD subsidies. Hence, it would be what might be called “negative SDT”: a reduction of exemption from obligations in respect of import controls and domestic subsidies for agriculture. How “dangerous” would it be to the international trade system if such countries were to be accorded relief of this kind? Would it disrupt world trade? Two illustrative indicators of the answer are provided in Table 5. This takes the countries listed in Table 4² and shows for each the share of agricultural exports in GDP and the country’s share of world agricultural trade.

These indicators are used on the assumption that the principal “danger” for other WTO members is that, sheltering behind high import barriers and benefiting from substantial subsidies, some of these states might boost substantially their agricultural exports, in competition with those of other WTO members. (Arguably, another concern is that SDT will result in lower imports by these states and, hence, lower exports by other WTO members. But, given that all the countries included in Table 4 are ones with low calorie availability, it can be inferred reasonably that any effect on global demand will be minimal.)

The countries in Table 5 are listed in declining order of their agricultural exports as a share of

world exports. Only two countries – Thailand and India – account for over 1 per cent of world agricultural exports, and only seven account for over 0.25 per cent. Of these, only one (Côte d’Ivoire) has a *per capita* calorie supply exceeding the 2,500 threshold (although a further three – India, Vietnam and Pakistan – come close). The cumulative share of the rest is 3.89 per cent.

It goes beyond the scope of this initial essay to assess whether or not WTO members would consider countries supplying such low shares of world exports to be a “threat” and, if so, whether one could identify additional parameters for SDT that would overcome the problem. But it would appear to be worth serious consideration.

A combination of the following criteria would include a larger number of low-calorie-supply countries (66) than does the least developed criterion alone (37):

- daily *per capita* calorie supply of under 2,500; and/or
- agriculture accounting for over 20 per cent of GDP, and
- 0.25 per cent or less of world agricultural exports.

Clearly, this does not rule out situations in which a state has a small share of the total but nevertheless a large share in particular product groups where industrialised countries also have production. This could be accommodated by setting a maximum share of imports for any product or, more permissively, leaving exceptions to the general rule to bilateral negotiation.

To see how this latter approach might work in practice, consider the levels at which SDT can be provided. There are three main levels:

1. General statements of principal in the Doha Round Agreement that apply to all, or most, of the sub-agreements.
2. Broad provisions within the Agreement on Agriculture (such as would be in the proposed Development Box discussed by Constantine Michalopoulos).

Table 5: Trade share of vulnerable states

Country	Agric. exports as share of GDP 1999	Agric. exports as share of world agric. exports 2000	Cum. share of world agric. exports 2000	Country	Agric. exports as share of GDP 1999	Agric. exports as share of world agric. exports 2000	Cum. share of world agric. Exports 2000
Thailand	5.80%	1.76%	1.76%	Tajikistan	n/a	0.03%	8.39%
India	1.00%	1.20%	2.96%	Togo	8.30%	0.03%	8.42%
Vietnam	8.50%	0.53%	3.49%	Turkmenistan	n/a	0.03%	8.45%
Côte d'Ivoire	21.20%	0.46%	3.95%	Albania	n/a	0.02%	8.47%
Guatemala	8.20%	0.38%	4.33%	Azerbaijan	2.00%	0.02%	8.49%
Philippines	1.80%	0.37%	4.70%	Botswana	1.70%	0.02%	8.51%
Pakistan	2.00%	0.26%	4.96%	Chad	5.70%	0.02%	8.53%
Kenya	9.70%	0.25%	5.21%	Georgia	1.30%	0.02%	8.55%
Uzbekistan	n/a	0.24%	5.45%	Guinea-Bissau	23.30%	0.02%	8.57%
Sri Lanka	n/a	0.23%	5.68%	Madagascar	2.20%	0.02%	8.59%
Zimbabwe	14.50%	0.20%	5.88%	Mongolia	10.10%	0.02%	8.61%
Peru	1.30%	0.17%	6.05%	Nepal	1.60%	0.02%	8.63%
Cuba	n/a	0.16%	6.21%	Yemen	0.90%	0.02%	8.65%
Paraguay	7.50%	0.15%	6.36%	Zambia	1.90%	0.02%	8.67%
Honduras	8.30%	0.14%	6.50%	Bahamas	n/a	0.01%	8.68%
Cameroon	5.20%	0.12%	6.62%	Burundi	7.70%	0.01%	8.69%
Nigeria	1.30%	0.12%	6.74%	Cambodia	1.50%	0.01%	8.70%
Uganda	6.90%	0.11%	6.85%	Central African Rep.	2.70%	0.01%	8.71%
Bolivia	4.40%	0.10%	6.95%	Congo Dem. Rep.	n/a	0.01%	8.72%
Ethiopia	6.30%	0.10%	7.05%	Djibouti	n/a	0.01%	8.73%
Papua New Guinea	12.00%	0.10%	7.15%	Dominica	n/a	0.01%	8.74%
Croatia	n/a	0.09%	7.24%	Gambia	9.30%	0.01%	8.75%
Malawi	20.00%	0.09%	7.33%	Guinea	1.00%	0.01%	8.76%
Sudan	n/a	0.09%	7.42%	Haiti	n/a	0.01%	8.77%
Dominican Rep.	1.90%	0.08%	7.50%	Lao PDR	2.20%	0.01%	8.78%
Nicaragua	13.60%	0.08%	7.58%	Mauritania	3.60%	0.01%	8.79%
Panama	3.20%	0.08%	7.66%	Mozambique	0.80%	0.01%	8.80%
Swaziland	28.50%	0.08%	7.74%	Rwanda	2.40%	0.01%	8.81%
Tanzania	3.50%	0.08%	7.82%	Solomon Islands	n/a	0.01%	8.82%
Moldova	27.70%	0.07%	7.89%	St Vincent	n/a	0.01%	8.83%
Venezuela	0.40%	0.07%	7.96%	Congo Rep.	0.80%	0.01%	8.84%
Mali	9.00%	0.06%	8.02%	Armenia	1.00%	0.00%	8.84%
Myanmar	n/a	0.06%	8.08%	Comoros	3.40%	0.00%	8.85%
Guyana	32.00%	0.05%	8.13%	Lesotho	0.80%	0.00%	8.85%
Kyrgyzstan	n/a	0.04%	8.17%	Sierra Leone	1.20%	0.00%	8.85%
Senegal	2.30%	0.04%	8.21%	Angola	0.10%	0.00%	8.85%
Bangladesh	0.30%	0.03%	8.24%	Eritrea	0.50%	0.00%	8.85%
Benin	5.70%	0.03%	8.27%	S. Tomé/Príncipe	10.60%	0.00%	8.85%
Burkina Faso	5.10%	0.03%	8.30%	Seychelles	0.30%	0.00%	8.85%
Namibia	4.00%	0.03%	8.33%	Antigua/Barbuda	n/a	0.00%	8.85%
Niger	5.50%	0.03%	8.36%	Maldives	n/a	0.00%	8.85%

Sources: World Bank, *World Development Indicators* database website (GDP); FAO Statistical Databases website (agricultural export values).

3. Specific commitments in each member's implementation schedules, which are subject to bilateral negotiation during the Round.

A broad exemption could be provided at either of the top two levels but with a caveat stating the grounds on which a member could object to its application by a given state (e.g. both have a non-trivial share of world trade in a given product). It would then become a matter for bilateral negotiation over specific national commitments. The Single Undertaking provision of WTO negotiations – whereby nothing is agreed until everything is agreed – would limit the extent to which the initial agreement of principle became a hostage to fortune.

5.2 Special and differential treatment on import dependency

It was suggested in Table 1 that poor countries, dependent upon agricultural imports and with weak trade entitlements, might legitimately be concerned about industrialised country actions that would tend to increase the price, or otherwise reduce the availability, of food imports. The appropriate SDT in such cases would not be relief from tougher rules governing their own trade and production policies, but compensatory action (either within the WTO or by prior agreement via other institutions) to help them to adjust to such change.

There are two key issues: one is how such compensating action is to be enforced; how, for example, can assistance provided by independent agencies be related to the negotiations? A small contribution to dealing with this major question is made in the final article of the *Bulletin*. The other key issue, dealt with in this section, is whether a better categorisation of such countries can be obtained.

The aim of the least developed and NFIDC categories combined is to identify such countries, but one may question how well this is achieved. Table 6 provides an illustration of this inadequacy. The table, in which states are presented in declining order of agricultural imports as a share of GDP, shows calorie availability, the vulnerability index, agricultural imports as a share of GDP, and least developed/NFIDC status for:

- all the states with *per capita* calorie supply of under 2,500,⁵ and
- any state with greater vulnerability (higher index number) than the mean for states registering under 2,500 calories (shaded in the table).

The table suggests that the least developed and NFIDC categories miss some states that ought to be included. For example, if one takes agricultural imports of over 5 per cent of GDP as a threshold, there are three states that do not fall into either group and for which agricultural imports exceed this level *and* calorie supply is below 2,500 *per capita* and trade vulnerability is high. This number increases to five if the states at the foot of the table (for which import and/or GDP data are not available) are assessed on the other two criteria.

At the same time, seven of the 22 NFIDCs⁶ and five least developed countries⁷ do not appear in the table at all, indicating that they have over 2,500 calories *per capita* plus a lower trade vulnerability and/or agricultural import dependence. Since the source of most compensatory assistance will probably be the main aid donors (regardless of the institutional route through which it is provided), and given that they recognise the least developed group as one for special aid attention, the absence of some least developed countries from Table 6 is probably not serious. If one identified as the countries requiring special concern all least developed countries plus non-least developed countries that have low calorie availability, high trade vulnerability, and significant proportionate food imports, then coverage would be reasonably good.

6 Conclusions

There are strong views about the desirability or otherwise of developing countries liberalising their import regimes, and on how they should deal with change in global markets following OECD liberalisation. But they are not the concern of this article. This is not because they are unimportant, but because there are other relevant questions that also need to be discussed and because so little is yet known about which proposals will finally make it to the agricultural negotiating table.

Table 6: Trade vulnerability and low-calorie status

Country	Agric. imports as share of GDP ^a 1999	Daily <i>per capita</i> calorie supply ^b 1997	Composite vulnerability index ^c	LDC	NFIDC
Gambia	27.87%	2,350	9.331	Yes	
S. Tomé/Príncipe	19.98%	2,138	7.69	Yes	
Sierra Leone	19.51%	2,035	5.06	Yes	
Mauritania	19.40%	2,622	6.068	Yes	
Lesotho	18.68%	2,243	5.985	Yes	
Swaziland	17.76%	2,483	9.633		
Comoros	14.26%	1,858	5.425	Yes	
Nicaragua	13.50%	2,186	4.92		
Yemen	11.46%	2,051	5.259	Yes	
St Lucia	10.68%	2,734	7.449		Yes
Senegal	10.40%	2,418	5.026	Yes	
Seychelles	9.01%	2,487	6.375		
Guyana	8.31%	2,530	7.953		
Honduras	8.07%	2,403	5.373		Yes
Mauritius	7.37%	2,917	6.51		Yes
St Kitts/Nevis	7.01%	2,771	6.362		Yes
Angola	6.80%	1,903	6.282	Yes	
Niger	6.70%	2,097	4.957	Yes	
Fiji	6.55%	2,865	8.888		
Jamaica	6.46%	2,553	7.484		Yes
Belize	6.39%	2,907	6.652		
Botswana	6.15%	2,183	10.158		Yes
Benin	6.00%	2,487	5.06	Yes	
Papua New Guinea	5.93%	2,224	6.308		
Togo	5.47%	2,469	5.248	Yes	
Nepal	5.20%	2,366	5.173	Yes	
Malaysia	5.00%	2,977	5.903		
Burkina Faso	4.65%	2,121	4.923	Yes	
Mozambique	4.55%	1,832	4.907	Yes	
Bangladesh	4.51%	2,085	4.744	Yes	
Congo Rep.	4.49%	2,143	5.961		
Panama	4.16%	2,430	4.995		
Pakistan	3.95%	2,476	4.795		Yes
Uganda	3.77%	2,085	4.876	Yes	
Guinea	3.71%	2,231	5.282	Yes	
Rwanda	3.63%	2,056	4.797	Yes	
Philippines	3.51%	2,366	4.595		
Mali	3.48%	2,029	5.083	Yes	
Central African Rep.	3.37%	2,016	4.802	Yes	
Guatemala	3.33%	2,339	4.431		
Namibia	3.31%	2,183	6.527		
Dominican Rep.	3.21%	2,288	4.858		Yes
Kenya	3.12%	1,976	4.935		Yes
Zimbabwe	2.97%	2,145	4.969		
Tanzania	2.96%	1,995	5.035	Yes	

Table 6 (cont.)

Country	Agric. imports as share of GDP ^a 1999	Daily <i>per capita</i> calorie supply ^b 1997	Composite vulnerability index ^c	LDC	NFIDC
Zambia	2.80%	1,970	5.549	Yes	
Ethiopia	2.55%	1,858	4.786	Yes	
Malawi	2.44%	2,043	5.2	Yes	
Bolivia	2.37%	2,174	4.691		
Chad	2.24%	2,032	5.12	Yes	
Burundi	2.11%	1,685	4.929	Yes	
Madagascar	1.90%	2,021	4.785	Yes	
Peru	1.88%	2,302	4.461		Yes
Thailand	1.87%	2,360	4.264		
Cameroon	1.60%	2,111	4.952		
Venezuela	1.37%	2,321	4.887		Yes
India	0.86%	2,496	3.782		
Antigua/Barbuda	n/a	2,365	11.246		
Bahamas	n/a	2,443	10.433		
Congo Dem. Rep.	n/a	1,755	5.186	Yes	
Djibouti	n/a	2,084	7.932	Yes	
Dominica	n/a	3,059	8.122		Yes
Gabon	n/a	2,556	6.229		
Grenada	n/a	2,768	7.848		
Haiti	n/a	1,869	4.474	Yes	
Maldives	n/a	2,485	8.654	Yes	
Solomon Islands	n/a	2,122	8.398	Yes	
Sri Lanka	n/a	2,302	5.076		Yes
St Vincent/Grenadines	n/a	2,472	6.563		Yes
Sudan	n/a	2,395	4.655	Yes	
Vanuatu	n/a	2,700	13.295	Yes	

^a Sources: World Bank, *World Development Indicators* database website (GDP); FAO Statistical Databases website (agricultural import values).

^b Amount available for human consumption. *Per capita* supply represents the average supply available for the population as a whole and does not necessarily indicate what is actually consumed by individuals. Source: UNDP (2000: Table 23).

^c Source: Commonwealth Secretariat/World Bank (1999).

Constantine Michalopoulos's (this volume) review of the deficiencies of the current Agreement and of some developmentally desirable options for its successor has established that a case exists in favour of some kinds of differentiation. He has also presented the case that this should extend beyond the least developed countries but not encompass the full developing country group. This is sufficient to establish the *prima facie* desirability of investigating appropriate memberships for such groups.

While the main country groupings in the WTO are self-selecting or adopted from other institutions, it is not quite true to say that the WTO has no operationally effective rules that apply only to internally agreed groups. As Claire Melamed (this volume) points out, differentiation in relation to the Agreement on Subsidies and Countervailing Measures applies to countries which have a *per capita* income of less than US\$1,000 per year. This precedent could be developed to provide the subtle differentiation that the preceding analysis suggests

is needed if SDT is to be concentrated on the most food-insecure states.

An alternative is to make wider use of the precedent set by the least developed country group: to borrow from other institutions a set of criteria and application mechanism. The UN negotiated the criteria for membership of the least developed group and maintains a list (reviewed from time to time) of the countries that meet them. FAO, for example, could be charged with

establishing categories of food-insecure state that relate to the areas of WTO rules. The councils of the FAO, therefore, rather than those of the WTO would be charged with the tricky task of identifying countries with sickly agricultural sectors and weak trade entitlements. The WTO's role would be limited to identifying variations on its rules that address these disadvantages, and determining whether or not the use of such variations by any given member would risk any significant trade harm to another.

Notes

1. WTO (2002) lists 23 NFIDCs, but one – Senegal – is also a least developed country, and has been included in that group rather than in the NFIDC group in this article.
2. The following analysis overlooks the problems of *countries* with strong entitlements but *population groups* with weak entitlements (because of inequitable domestic distribution). This is because problems of this type are dealt with more appropriately by the targeted SDT approach described above.
3. The composite vulnerability index (designed initially to respond to the problems that small countries perceive that they face) aims to integrate three aspects of vulnerability: economic exposure, remoteness and insularity, and susceptibility to environmental events and hazards. It uses the following variables to measure these aspects: export dependence (exports as a share of GDP), the UNCTAD diversification index, and, for small states, the proportion of the population affected by natural disasters over a long period of time (Commonwealth Secretariat/World Bank 1999).
4. Plus the six countries excluded from Table 4 because of lack of the relevant data.
5. Except 14, for which vulnerability data are not available.
6. Plus one (Cuba) for which neither vulnerability index nor GDP data are available.
7. Plus nine for which calorie supply data are not available.

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