

TMD DISCUSSION PAPER NO. 82

ON BOXES, CONTENTS, AND USERS: FOOD SECURITY AND THE WTO NEGOTIATIONS

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**January 2002
(Revised July 2002)**

This paper was presented at the OECD World Bank Global Forum on Agricultural Trade Reform, Adjustment and Poverty, Paris, 23-24 May 2002. It is based on an earlier version prepared for the meeting of the Advisory Group October 25, concerning the research project: WTO negotiations and Changes in National Agricultural and Trade Policies: Consequences for Developing Countries. The project is funded by DANIDA (Ministry of Foreign Affairs) and implemented jointly by IFPRI and the Institute of Agricultural and Fisheries Economics (SJFI) of the Ministry of Food, Agriculture and Fisheries of Denmark.

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ABSTRACT

An important component of the current debate about agriculture trade negotiations is whether further liberalization of trade and agricultural policies may help or hinder food security in WTO member countries. These concerns were formulated first, in Article 20 of the Agreement on Agriculture negotiated during the Uruguay Round, which indicated that negotiations should take into consideration, among other things, “non trade concerns”; and in its preamble, which mentioned as examples of those concerns, “food security and the need to protect the environment”. They were also reaffirmed in the Doha Declaration, which declares that “the long-term objective” is “to establish a fair and market-oriented trading system through a program of fundamental reform”, and confirmed that special and differential treatment will be granted to developing countries “to effectively take account of their development needs, including food security and rural development”.

Although the issue of food security and agricultural negotiations within the WTO has been raised both by industrialized (“multifunctionality” of agriculture) and developing countries, the discussion in the case of developing countries has included important policy objectives such as elimination of poverty and hunger (as cause and consequence of food insecurity). Concerned with the effects that further negotiations would have on the attainment of those objectives in poor countries, several developing countries have proposed the creation of a “Development Box” or a “Food Security Box”.

To contribute to this debate, the paper surveys and discusses in greater detail three main aspects of trade liberalization and food security within the WTO: the adequacy of the current WTO classification of countries according to their food security situation; the policy perspectives in industrialized countries and in developing countries; and the legal issues faced by developing countries.

The paper concludes that a better classification is needed within the WTO to target food insecure countries, that many food security concerns can be addressed with specific clarifications and changes in the current language of the AoA, and that although developing countries may not be legally constrained to invest in food security, they lack the financial, human, and institutional resources to do so.

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INTRODUCTION

The Agreement on Agriculture negotiated during the Uruguay Round of international trade negotiations stipulated in Article 20 the need to continue agricultural negotiations within the World Trade Organization (WTO), beginning in the year 2000. At Doha, in November 2001, WTO members launched multisectoral trade negotiations, including agriculture as part of a single undertaking. An important component of the current debate about those negotiations is whether further liberalization of trade and agricultural policies may help or hinder food security in WTO member countries. Although Article 20 only indicates that those negotiations should take into consideration, among other things, “non trade concerns”, the preamble to the Agreement mentions as examples of those concerns, “food security and the need to protect the environment”.¹ The Doha Declaration, after reaffirming that “the long-term objective” is “to establish a fair and market-oriented trading system through a program of fundamental reform”, confirmed that special and differential treatment will be granted to developing countries “to effectively take account of their development needs, including food security and rural development” (Doha Declaration, paragraph 13).

While usually the preoccupation with economic liberalization and food security has centered on developing countries (Pinstrup-Anderson 1990, Commander 1989, and Sahn et al. 1997), some industrialized countries have also included food security concerns as part of the idea of “multifunctionality” of agriculture, a concept that some WTO members have argued should be considered during the negotiations.²

¹ The text of Article 20 indicates that negotiations would take into account: “(a) the experience to that date from implementing the reduction commitments; (b) the effects of the reduction commitments on world trade in agriculture; (c) non-trade concerns, special and differential treatment to developing country Members, and the objective to establish a fair and market-oriented agricultural trading system, and the other objectives and concerns mentioned in the preamble to this Agreement; and (d) what further commitments are necessary to achieve the above mentioned long-term objectives” (GATT 1994, p. 55).

² The basic idea of multifunctionality is that agriculture, in addition to supplying the obvious direct products, also generates positive externalities including food security, environmental conservation, rural landscape, employment, and vital rural communities. A policy conclusion from this line of analysis is that the government could justifiably intervene with subsidies and protection to agriculture to ensure an adequate supply of the postulated externalities. The notion of multifunctionality has led to some controversy, including the fact that other productive sectors may also have multifunctional properties and the nature of the policies that may help generate the postulated externalities without affecting other countries (for a general discussion, see FAO 1999b, OECD, 2001; and Diaz-Bonilla and Tin, 2002; for country perspectives see Abare 1999, European Union 2000, Norway 1998, and USDA 1999).

In consequence, the issue of food security and agricultural negotiations within the WTO has been raised both by industrialized and developing countries. For richer countries that are net food importers, the discussion centers, in part, on whether there exists some “adequate” proportion between total domestic food production and the level of trade needed to satisfy food requirements at the national level, and whether the continuation of the negotiating process may place undue constraints on attaining the desired ratio of imports over domestic production (Japan and the Republic of Korea, 2000). Those ratios may be linked to some notion of insurance in an uncertain world, or national autonomy to be able to confront outside pressures, or both. It is much less clear what would be the basis for claiming food security concerns in the case of industrialized countries that are net food exporters.

In the case of developing countries, the discussion is broader, including whether important policy objectives such as elimination of poverty and hunger (as cause and consequence of food insecurity) may have been helped or hindered by the current AoA, and whether further negotiations may improve upon the existing text or will further compromise the attainment of those objectives in poor countries. Several developing countries have presented their concerns about food security issues, including the possibility of special and differential treatment embedded in a “Development Box” or a “Food Security Box” (WTO b and c).

To properly address those concerns there are at least two questions to consider: first, what is the relevance of the current classification of countries in the WTO with respect to their food security status; the second is whether the current legal texts, which define WTO commitments on the basis of those categories of countries, are adequately considering food security concerns through the AoA special and differential treatment. Both questions are related: if the categories are badly defined to capture food security concerns, then it is unlikely that the different treatment under WTO rules will deal with those concerns in a meaningful way. But even if those categories capture the variety in the situations of food (in)security, current WTO rules and commitments may still need adjustments to take into account the problems of food insecure countries.

The paper is organized as follows. The next section briefly discusses the notion of food security and analyzes different channels through which changes in agricultural

trade may affect food security. A short background on food security trends follows. The rest of the paper discusses in greater detail three main issues related to WTO negotiations: country classification according to their food security situation; protectionism and subsidies in industrialized countries; and domestic policies for food security in developing countries. The paper closes with some concluding remarks.

FOOD SECURITY AND NUTRITION SECURITY

Food security can be analyzed at the global, national, regional, household, and individual levels (Figure 1). Since the World Food Conference of 1974, the focus has been moving from the initial concerns about food availability at the global and national levels to those aspects that affect food access and utilization at the household and individual levels, where issues of food security emerge in a more concrete way (Maxwell 1996). The importance of poverty and lack of income opportunities in food insecurity was highlighted early (Sen 1981). In addition to the trend level of food availability, its variability around that trend for both food supply and access, and its sustainability over time were increasingly emphasized (Maxwell 1990). It was further argued that food intakes should provide for more than mere survival: they have to support also an active and healthy life (Maxwell and Frankenberger 1992). The 1996 World Food Summit included several of those components of the notion of food security when it accepted the definition that “food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (FAO 1996).

But availability and access are only preconditions for adequate utilization of food. They do not determine unequivocally malnutrition (or nutrition insecurity) at the individual level (Smith 1998, and Smith and Haddad 2000). For instance the measure of malnutrition utilized by the Food and Agriculture Organization (FAO, 1999a) (which is based on calories availability at the national level, doubly corrected by the gender and age structure of the population, and by the consumption or income distribution profile of the country), shows a highly significant correlation with national food availability measured by national consumption of calories per capita, but is more weakly correlated

with “deeper” measures of malnutrition, such as the percentage of child malnutrition based on anthropometrical measures (Smith 1998). Analyzing nutrition insecurity at the individual level (utilizing child malnutrition as the indicator) requires the consideration of other determinants (Smith and Haddad 2000). Figure 1, shows some of the links between trade and trade policies, on one hand, and food security and nutrition security, on the other.

Trade influences both world food availability, as well as production and food imports (including food aid) at the national level (the latter two aspects defining national food availability).³ Food availability is a component of the more specific notion of food security, and it has been shown to have a positive correlation with declines in malnutrition (Smith and Haddad, 2000). But trade and trade policies may also have an impact on the rate and variability of growth, as well as its “quality” (i.e. the employment, income distribution, and poverty effects). Income opportunities, along with food availability, define food security at the household level. Another important channel of influence of trade and trade policies is through government revenues, directly as collection of trade taxes and indirectly through the impact of the rate and quality of growth on general tax collection (Winters 2000a and b). The level of government revenues affects the possibility of implementing transfer policies (like food subsidies or other poverty-oriented programs) and to finance public services and investments in health, education, and related areas. Looking at the individual level, malnutrition depends on food security (i.e. household and individual food access), as well as other determinants such as the quality and quantity of care (which is mostly related to women’s education and women’s relative status in the society) and the health environment (including health services and infrastructure) (Figure 1; for a more detailed discussion see Smith and Haddad 2000).

Certainly food and nutrition security take a more concrete form at the household and individual levels, where they are heavily influenced by such determinants as income distribution and women’s status in society. Yet trade negotiations within WTO are

³ It should be noticed that the Agreement on Agriculture of the WTO, covers not only agricultural trade policies but also domestic agricultural policies. Therefore, the “Trade” circle in Figure 1 can be understood as including in addition to trade and trade policies, the legal framework for domestic agricultural policies, as embedded in the WTO obligations.

conducted at the national level, and special and differential treatment is granted to categories of countries.⁴ Therefore, part of the discussion that follows, which focuses on the implications of food security as a non-trade concern for possible changes in the WTO legal framework, particularly the Agreement on Agriculture, takes in several instances a national perspective. This is particularly the case for the cluster analysis of countries based on food (in)security indicators, which utilizes national averages of consumption, production, and trade measures.

TRENDS IN FOOD SECURITY

Food security appears to have improved, on average, over the past four decades. Total food availability in developing countries, measured in daily calories and grams of proteins per capita, was about 30 percent higher at the end of the 1990s than in the 1960s, even though the world population almost doubled during that time (Table 1 and 2). The number of malnourished children under five (a better indicator of food problems than average food availability) declined between the 1970s and the mid-1990s by about 37 million (see Table 3), and the incidence of malnutrition dropped from 47 percent to 31 percent (Smith and Haddad 2000).

Other points to be noticed are:

- Food availability in developing countries comes mostly from domestic production: imports were about 15 percent of total food production in the 1990s (up from 10 percent in the 1960s and 1970s) (Figure 2).
- Food trade, along with food stocks, contributed to reduce the variability of food consumption in developing countries to about 1/3 to 1/5 of that of food production (Tables 4, 5 and 6).

⁴ Although skewed income distributions and bias against women would certainly modify results based on national averages, it seems doubtful that a country can claim special and differential treatment on trade negotiations because it is discriminating against women and the poor through other policies and institutions.

- The burden of the total food bill (measured by food imports as a percentage of total exports) declined on average for developing countries from almost 20 percent in the 1960s to about 6 percent in the 1990s (Figure 3). This was caused by the expansion of total trade, which has grown faster than food imports, along with a decline in real food prices.
- Volatility of real agricultural prices in world markets in the last half of the 1990s—since the implementation of the World Trade Organization (WTO) agricultural agreements—does not seem to be higher than for the whole period since the 1960s (Table 7). It is less clear what has happened to the volatility of agricultural prices within developing countries, which also depends on domestic policies.

However, although food security has improved in general, there are regions and countries at risk, and some have become more food insecure:

- Average food availability is still low for regions such as sub-Saharan Africa (SSA). And for more than one-fourth of all developing countries, per capita indicators have decreased since the 1960s (Table 8). In most cases those declines appear to be associated with war.
- The number of malnourished children under the age of five has actually increased in SSA, and the incidence of malnutrition is still very high there and in South Asia (Table 3).
- For the least-developed countries (LDCs), the total food bill has remained high at 20 percent (Figure 3), and several developing countries with large external debts face additional constraints in financing their food imports.

In summary, while aggregate trends of food security indicators for developing countries seem positive, the situation is deteriorating in several cases. There appears to be a variety of food (in)security situations across countries, which require a more disaggregated analysis. This issue is discussed next.

VARIETY OF FOOD SECURITY SITUATIONS AND IMPLICATIONS FOR WTO NEGOTIATIONS

The heterogeneity of country cases for food security analysis raises the question of the adequacy of the WTO country categories to address that non-trade concern. There are four main categories with some bearing on the issue. In addition to the basic distinction between developed and developing countries, the WTO recognizes two other groups within developing countries: LDC, a United Nation (UN) classification; and Net Food Importing Developing Countries (NFIDC), which are selected through the Committee on Agriculture of the WTO. The category of LDC has several legal implications under the WTO framework, and both types of countries were considered in a special Ministerial Decision on agricultural issues (the “Decision on Measures Concerning the Possible Negative Effects of the Reform Program on Least-developed and Net Food-Importing Developing Countries”) approved at the end of the Uruguay Round.⁵

The question is how well those four categories capture the heterogeneity of developing countries for food security concerns. Diaz-Bonilla et al. (2000) try to answer that question using various methods of cluster analysis (including an approach based on fuzzy sets) and data for 167 countries to identify groups of countries categorized according to five measures of food security: food production per capita, the ratio of total exports to food imports, calories per capita, protein per capita, and the share of the non-agricultural population.⁶ To avoid giving more weight to any one variable because of its unit of measure, variables were converted to z-scores (subtracting the mean and dividing by the standard deviation). The results identify 12 clusters of countries according to their similarities in their food security profiles (measured by the variables listed above) from very food insecure, cluster 1, to very food secure, cluster 12 (Table 9).

⁵ See Díaz-Bonilla, Piñeiro, and Thomas (1999) for a more detailed discussion of these groups. Other categories with legal implications for the WTO are not related to agricultural issues. The Food and Agriculture Organization (FAO) also defines Low Income Food Deficit Countries (LIFDCs), but they are not subject to any special treatment or legal consideration under the WTO.

⁶ The indicators utilized in the study are considered proxies for three elements of food security at the national level: food availability, access, and utilization.

Clusters with centers (in z-score values) falling below -0.5 (minus half a standard deviation from zero) are defined as “food insecure”. Clusters 1, 2, 3, and 4 fall in that category. Clusters 5,6,7, and 8 have most of their variables in the -0.5 to +0.5 range (plus or minus half a standard deviation around zero). They are considered to be in the “food neutral” category. Finally, clusters 9, 10, 11, and 12, with most of the variables above +0.5, are considered “food secure”.

Figure 4 illustrates the relative position of the 12 clusters in a diagram where the average value of the z-score variables for the combined consumption of calories and proteins, is plotted against the trade indicator showing the burden of the food bill (also in z-score values). The solid lines at the values of -0.5 across both axis of the chart divide the space into 4 main quadrants separating the food insecure clusters from the rest (the dotted lines at the +0.5 values add other quadrants differentiating among clusters that are food neutral or food secure): clusters 1 and 2 appear in the quadrant that is consumption vulnerable and trade stressed (Southwest quadrant), with values below -0.5 on both dimensions; cluster 3 is in the Southeast quadrant, which shows consumption vulnerability but not trade stress; cluster 4 is in the trade stressed quadrant but is above the level of -0.5 for consumption (Northwest quadrant). The rest of the clusters appear in the intermediate or high levels of consumption and trade security (Northeast quadrant), with both dimensions above the -0.5 value.

Cluster 1 includes the most food insecure countries. They show the lowest levels of availability of calories and proteins per capita, and of food production per capita. Their food imports use more than 20 percent of their total export earnings, compared to the world weighted- average of 6 percent, and they are predominantly rural (only about 23 percent of the population is urban, Table 9). This group includes 30 countries, all of them LDCs, except Kenya, a country classified as NFIDC by the WTO. They are mostly from Africa (23 out of the total 30). They include 21 WTO members and 4 WTO observers (Table 10).

Cluster 2 includes food insecure countries with an urban profile. Those countries show somewhat higher levels of consumption and production than cluster 1, but they are still “consumption vulnerable” and also trade stressed. The main difference is that these countries are far less rural than those in other food vulnerable clusters: in fact, on

average, more than 70 percent of the population is classified as urban (see Table 9).⁷ This raises the issue of urban food insecurity, which has its own special characteristics (see Garret and Ruel 2000). While countries in the previous cluster, being mostly rural, may be more concerned about food insecurity in the countryside and the impact of agricultural imports on poor agricultural producers, in countries with larger urban populations (like those in cluster 2), and where conceivably an important percentage of poor and food insecure groups may be urban dwellers, there is a clear trade-off for policies aimed at agricultural trade protection: they may maintain higher incomes for poor producers, but they may also act as a tax on poor consumers (both effects depending on other policies and the interaction of markets and institutions).⁸ Among the 14 members of this cluster, two are LDCs from Africa and five are NFIDCs (mostly from Latin America). The other seven members are basically former republics of the ex-Soviet Union and Latin American countries. Except for Tajikistan, all of the countries are either WTO members (11) or observers (2) (Table 10).

Cluster 3 includes food insecure countries with consumption vulnerability. This cluster has availability of proteins and calories below cluster 2, but is better off than cluster 1. It is also slightly below cluster 2 in production (but above cluster 1), and it is as rural as cluster 4. The main characteristic is that the burden of the food bill over total exports is at an intermediate level. This cluster can be characterized as consumption vulnerable but trade neutral, the mirror image of cluster 4, discussed below (Figure 4).

Cluster 3 includes 17 countries, 4 of which are LDCs and 2 are NFIDCs. All belong to the WTO as members or observers, and are developing countries in Africa, Asia, and Latin America (Table 10). Three countries from the Cairns Group appear in this group (Bolivia, Guatemala, and the Philippines).⁹ India, Namibia, the Philippines, and Viet Nam are also in Cluster 3. These countries have a low incidence of the food bill

⁷ The variable for urban/rural population is not shown in Figure 4.

⁸ The case of vulnerable rural groups that are net consumers of food must also be considered, even in Cluster 1.

⁹ The Cairns Group is a negotiating block of agricultural exporting countries that has argued for greater liberalization in world agricultural markets. The current 18 members are Argentina, Australia, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Fiji, Guatemala, Indonesia, Malaysia, New Zealand, Paraguay, the Philippines, South Africa, Thailand, and Uruguay.

on total exports (i.e. they are not “trade stressed”): about 5 percent for India and Viet Nam, and about 6 percent for Namibia and the Philippines. Except for the Philippines, these countries are all net food exporters. Some of them may also exemplify a possible policy dilemma: because those countries have a low food import bill they could expand food imports to improve their low levels of consumption; but at the same time, because they have large poor agricultural populations, there is concern regarding the impact of additional food imports on those rural groups.

Cluster 4 is composed of food insecure countries with trade vulnerability. While the previous cluster had low consumption but intermediate levels of trade burden, cluster 4 shows the opposite profile: it has intermediate levels of consumption but it is very trade stressed; in fact, this group has the heaviest trade burden with a food bill of almost 21 percent of total exports. Figure 4 shows cluster 4 in the trade stressed quadrant but with an average consumption of calories and proteins above not only Clusters 1, 2, and 3, the other food insecure groups, but also the food neutral Cluster 5. Cluster 4 has 13 members, including five LDCs and three NFIDCs. All of them except one are WTO members or observers. Although the inclusion of some bigger countries in this group (such as Pakistan, Sudan, and Senegal) conform to the notion of having intermediate consumption but being trade stressed, the classification of some small islands from the Caribbean and the Pacific in this group is less clear. This may simply reflect lack of data regarding exports of services (like tourism) and/or the fact that the urban/rural distinction does not have the same meaning in small islands as in bigger countries.

The rest of the countries are classified as food neutral or food secure.¹⁰ The conclusion is that some of the categories utilized by the WTO appear inadequate to capture food security concerns. This seems to be the case of the category of “developing countries”: they appear scattered across all levels of food (in)security, except cluster 12, the highest ranked among the food secure groups (Table 10). This fact has implications for the definition of a “Development Box” as different from a “Food Security Box” (see below)

¹⁰ In Diaz-Bonilla et al, 2000, the case of some countries classified in food neutral clusters, but with a high burden of food imports over total exports is also discussed. A special situation is Egypt, a NFIDC that because of the level of trade stress may be counted among the food insecure.

In the category of NFIDCs, 10 (or 11 counting Egypt as food insecure) out of the 18 countries are in food insecure groups (clusters 1 to 4); the remaining 8 (or 7 without Egypt) are in food neutral groups (clusters 5 and 7), which have intermediate levels of food security. Being a net food importer appears to be only a weak indicator of food vulnerability. Some countries may be net food exporters but still have a larger percentage of their total exports allocated to buy food, and vice-versa (for example, Mali, an LDC, is a net food exporter but its food bill is about 15 percent of total exports, while Venezuela, a NFIDC, spends about 5 percent of total exports on imported food). Additionally, some countries may be net food importers just because of a dominant tourist industry (like Barbados, which also has the highest income per capita of the NFIDCs, about US\$7,000). Other NFIDCs have important levels of oil exports (such as the case of Venezuela, and Trinidad and Tobago) and therefore imports of food only reflect the comparative advantages of their production structure. With the exception of Egypt, food imports of the NFIDCs in the food neutral group represent about nine percent of total exports; for the food insecure NFIDCs (including Egypt), the average is about 16 percent.

The category of LDCs, on the other hand, does correspond broadly to countries suffering from food insecurity, even though food security criteria were not explicit in their definition. Only three out of the 43 LDCs covered in this study are not among the first four clusters of most vulnerable countries.¹¹ At the same time, some countries, like Kenya, have a food security profile similar to the more vulnerable LDCs but are not included in this category, although it is a NFIDC. Others, such as El Salvador, Georgia, Mongolia, and Nicaragua (all WTO members), which have somewhat better profiles but are still in the food insecure categories, are neither LDCs nor NFIDCs.

In terms of the WTO negotiations, this analysis suggests that using the category of LDCs to define specific rights and obligations in the WTO for food security reasons appears an appropriate starting point. Yet, some countries classified as food insecure by the cluster analysis are neither LDC nor NFIDC and are therefore now excluded from

¹¹ Cape Verde, Maldives, and Myanmar are in clusters 6 and 7. However, as in the case of Egypt, the first two countries show high levels of the food import bill compared to total exports. Therefore, they could also be considered among the food insecure countries (see the full discussion in Diaz-Bonilla et al, 2000). That would leave Myanmar as the only non-food insecure among the LDCs included in the cluster analysis.

WTO special treatment. A category of food insecure countries based on quantitative indicators (which would include all LDCs plus those NFIDCs that are food insecure, plus other food insecure countries according to the selected indicators), would correct that exclusion. There is still the issue of NFIDCs that are not food insecure. The current category of NFIDCs, a classification negotiated during the Uruguay Round, has some implications as defined in the Ministerial Decision, and constitutes an acquired right. Even if a special category of food insecure countries is defined, all the NFIDCs would still have the general rights under that Decision, but only those that are food insecure would receive special and differential treatment for food security reasons.

It is also relevant to address the issue of food security raised by some developed countries as part of the notion of “multifunctionality” of agriculture, or, more generally, in the non-trade concerns. The cluster analysis classification, however, shows, unsurprisingly, that developed countries are all concentrated in the food secure groups (clusters 9 to 12). Therefore, the term “food security” seems to be utilized with different meanings in developed and developing countries. In terms of policy implications and the agricultural negotiations, maintaining the same label for two altogether different situations only obscures the issues being negotiated. The discussion of food security should be limited to the vulnerability of developing countries, using a different terminology for developed countries’ concerns.

In summary, the implication of this analysis is that there is a need for a better definition of food insecure countries, based on objective quantitative indicators. Those food insecure countries should be granted special and differential treatment limited to food security considerations, but those concessions should not change the balance of other rights and obligations for LDCs and NFIDCs that have been agreed for reasons other than food security.

But even if an adequate category of food insecure countries is defined, there is still the question of what are the changes in the legal texts of the WTO that can address those food security concerns. In discussing those possible changes, it is important to keep in mind a distinction between what is legal under the WTO and what are the economic implications of those legally available measures. In this regard, an obvious point (which is sometimes overlooked) must be stressed: the fact that a country has legal

room under WTO rules to follow a specific policy does not mean that such policy is adequate in terms of general welfare and equity (for that country and/or for others). The next sections cover both legal and economic aspects, trying to distinguish, when necessary, those aspects related to achieving what may be seen as a fair and balanced outcome in legal terms, and the efficiency, welfare, or equity merits of those commitments.

TRADE, TRADE LIBERALIZATION, AND FOOD SECURITY: POLICY PERSPECTIVES

The discussion about trade liberalization and food security can be divided into those aspects that relate to the agricultural policies of industrialized countries and those that apply to developing countries. This distinction corresponds to two broadly different approaches for the negotiations that developing countries may follow (and in fact have been following in different degrees): one is to play “offense” and try to open up markets in industrialized countries and limit their ability to use funds from their Treasuries to compete against farmers in non-subsidizing countries; the second is to use a “defensive” strategy, such as asking for high levels of protection for themselves and the possibility of utilizing the same (or even higher, in relative terms) levels of subsidies as the industrialized countries (Konandreas, 2000). In this section some of the economic policy issues are discussed, while the legal implications are taken up later.

Trade Liberalization in Industrialized Countries

It seems undeniable that the combination of domestic support, market protection, and export subsidies in industrialized countries has displaced agricultural production and exports from developing countries. Different studies before the beginning of the Uruguay Round in the mid 1980's tried to quantify the impact on developing countries of agricultural protectionism in industrialized countries. They usually showed substantial positive effects on developing countries' incomes, production, and exports of agricultural and agroindustrial products from an eventual reduction of tariffs and other forms of agricultural protection in industrialized countries (Valdés and Zietz, 1980; Goldin and

Knudsen, 1990). Simulation models for the Uruguay Round, as well as preliminary projections of possible scenarios for the current negotiations, show that agricultural and agroindustrial production in developing countries, as well as their net welfare, would increase if agricultural protectionism in industrialized countries was reduced (Sharma, Konandreas, and Greenfield, 1996; Goldin and van-der-Mensbrugge, 1995, for the Uruguay Round; Hertel, et al 2000; USDA/ERS, 2001; ABARE, 1999; for the current negotiations).¹² While those studies mainly project the future impact of possible scenarios of liberalization, other work supports similar conclusions from a historical perspective: they suggest important negative effects in several developing countries for production and employment linked to agroindustrial products such as meat, sugar, and canned tomatoes, as a result of industrialized countries' agricultural policies (OXFAM, 1987; Eurostep, 1999).

Increased access to international trade opportunities is usually associated with higher growth rates for the economy, in general, and for the agricultural sector in particular. Scandizzo (1998) shows, in a sample of 71 developing countries, covering the period 1969-1991, that agricultural exports are strongly and positively correlated with overall economic growth. But if agriculture growth is hampered by protectionism, this may have important implications for developing countries to the extent that agricultural-led growth strategies appear to have larger dynamic multipliers for the rest of the economy than other alternatives in poor developing countries (Delgado et al. 1998). Even in the success stories of the newly industrialized countries of East Asia, a common characteristic is that they invested strongly, and very early, in rural and agricultural

¹² Some of those studies also raise the possibility of negative welfare effects for developing countries that are net importers of agricultural products, due to adverse changes in the terms of trade (Sharma et al., 1996). Usually, if dynamic effects are considered the negative impacts disappear (USDA/ERS, 2001). Also the results of the simulations change when trade liberalization in other sectors (such as industry) is also considered (Hertel et al, 2000), and if unemployment is assumed, rather than the usual full employment closure. Finally, some of the simulations of developing countries' gains resulting from agricultural trade liberalization have usually lumped fruit and vegetables together with other subsectors, which may have led to underestimation of the benefits, considering the growing importance of this group of products in LDC exports. For instance, Islam (1990) found significant gains for LDCs of liberalization of world trade in fruit and vegetables. Yet, even after the Uruguay Round negotiations, production of fruit and vegetables remains highly protected in several developing countries, mainly on a seasonal basis, allowing entry with lower levels of tariffs only when there is no domestic production (Swinbank and Ritson, 1995). These issues need further analysis.

development (McCalla, 2000). In turn, high and stable growth rates have been commonly associated with reductions in poverty rates, and agricultural growth tends to have greater impacts in the reduction of poverty (see Lipton and Ravallion, 1995, and the recent reviews in Eastwood and Lipton, 2001, and Osmani, 2001). In particular, if countries are following their comparative advantages, international trade by labor-abundant poor developing countries, should help increase employment and wages, further alleviating poverty. To the extent that poverty is the main cause of food insecurity, then international trade opportunities should also help with food security concerns.

Other points to be noticed are that the expansion of trade in goods and services over the last decades, along with the decline in food prices resulting from technological advance, has led to sharp reductions of the incidence of the total food bill of developing countries as percentage of total exports (Figure 3). Also the fact that food consumption variability in individual countries is far smaller than food production variability shows the contribution of trade to food security (Tables 4, 5 and 6).

Therefore, a key objective for developing countries to increase economic growth, reduce poverty and enhance food security seems to be the elimination or the substantial reduction of subsidies and protectionism in industrialized countries during the current WTO negotiations. This may be an especially important issue for the poorer countries, where two-thirds of the population lives in rural areas, agriculture generates over one-third of the gross domestic product (GDP), and a substantial percentage of exports depends on agriculture (World Bank Development Indicators, 2001).

However, against this general proposition three main reservations have been raised, some linked to food security concerns. First, there is a worry that liberalization of agricultural policies in industrialized countries may increase the food bill of poor developing countries that are net food importers (see footnote 12). A second concern is that trade liberalization in industrialized countries could erode the trade preferences of poor developing countries that have preferential access to those protected markets. Third, some, mostly in the NGO community, have argued that export expansion may have harmful effects on poverty and food security (see for instance Francisco, 2000).

The first point is related to the fact that the combination of domestic support, market protection and export subsidies by industrialized countries depressed world

prices, hurting developing countries that were net exporters, but, it has been argued, probably helping the balance of payments position of developing countries that were net importers of those products (Koester and Bale, 1990; Sarris, 1991). This view, however, does not address the distributional impact within developing countries between consumers and producers, and across types of households. As importantly, it does not consider the employment effects from expanded production, if developing countries did not have to contend with subsidized and protected agriculture in industrialized countries. Even though agricultural trade policies in industrialized countries may have reduced the import bill of net importing countries, studies show that those same policies have had a stifling effect on agricultural and agroindustrial production in developing countries, regardless of their net trade position (Hertel, et al 2000; USDA/ERS, 2001; ABARE, 1999). Considering that those sectors are the main economic activities in many developing countries, particularly poor ones, and that they usually have significant growth multipliers for the whole economy (Delgado et al, 1998), the level of non-realized dynamic benefits for those countries may have been substantial.

Rather than maintaining protection in the industrialized countries, a welfare-enhancing approach would be to offer cash grants or other financial schemes to compensate net importing poor developing countries for higher prices linked to agricultural liberalization in developed countries.

The second point focuses on the possible erosion of preferences for a number of developing countries that have special market access arrangements with industrialized countries. For low-income developing countries, the preferential access usually represents a large percentage of agricultural exports and sectoral value added, and has important implications for rural employment and balance of payments.¹³ There are several options to compensate poor countries for the erosion in preferences that are better

¹³ The continuation of those preferences is already under threat for products such as sugar, both in the US and the EU, irrespective of what happens in the WTO negotiations. For instance, in the US market, Mexico has expanded access under NAFTA, and will reach total liberalization by 2007/8, while in the EU market, the inclusion of Eastern European countries, will reduce the margin of preferences (ABARE, 1999). The EU is also struggling to implement the WTO rulings related to bananas, which may change the allocation of quota rents across developing countries. Both the European Union and the USA have embarked on a series of regional trade negotiations that will create some rents, but erode others preexistent, such as those generated by the Generalized System of Preferences.

that maintaining current levels of protection. In some cases, changing the way TRQs operate could compensate the erosion of preferences in the short run. One possibility would be to grant import licenses to the exporting countries instead of giving them to domestic importers, and to reduce to zero the “in quota” tariff for those exporting countries. Another possibility is to transform into foreign aid the equivalent value of the trade preferences. This would mean extending to the affected poor developing countries the same logic applied when industrialized countries compensate domestic producers for the reduction in direct support. Considering that a policy of liberalization acts as a tax cut for consumers in the liberalizing countries, using part of those funds may help to finance the compensations to poor developing countries for the lost access, and still leave net benefits for consumers.

The third caveat refers to some possible scenarios under which trade expansion may have less benign effects on poverty and food security. Much depends on the level, inclusiveness, and stability of the growth rate generated by that expanded trade. While poverty in the developing world declines rapidly with distribution-neutral growth, deviations from neutrality may wipe out those gains for the vulnerable groups (Lipton and Ravallion, 1995). Furthermore, even with neutral growth at higher rates, if its variability increases generating a greater likelihood of crises, then the poor may face significant additional downside risks, with the prospect of long-lasting damage to their low levels of human and physical capital (i.e. crises may force poor families to sell productive assets, increase the possibility of illness, or have their children drop out of school) (see for instance, Addison and Demery, 1989; Lipton and Ravallion, 1995).

Within the agricultural sector, criticisms to different developments such as the Green Revolution, the increase in commercialization, and now the expansion of international trade, and more generally the process of globalization, centered on the possibility of negative effects on the welfare of poor producers and poor consumers, through diverse channels. A moderately negative scenario would point out to the constraints the poor face because of lack of resources and access to technology, which excludes them from participating profitably in expanding domestic or international markets. This exclusion may lead to the possibility of worsening income distribution, but not necessarily to increases in absolute poverty. A more worrisome scenario would be if

the poor became absolutely worse off, and not only in relative terms. Usually, arguments in support of the likelihood of this undesirable outcome suggest that the process of technological innovation or expansion of market opportunities may shift relative prices against the poor and/or reinforce the power of already dominant actors (large landowners, big commercial enterprises) allowing them to extract further incomes from the poor or to expropriate their assets. In terms of food security, the claims of negative effects usually revolve around the possibility of cash or export production displacing staple crops, and/or that women, usually the anchor for households' food security, may end up with less decision-making power and less resources due to the technological or commercial changes.

Different studies of the Green Revolution, and domestic and international commercialization, have addressed those concerns. They tend to paint a more positive view of the process, usually showing advances for the poor, due to production, employment and food price effects, although recognizing that uniform attainment of benign outcomes is by no means guaranteed (Hazell and Ramaswamy, 1991; Von Braun and Kennedy, 1994; IFAD 2001, among others). Also studies for several countries in Africa have shown that poverty fell more among export crop producers, than among food producers (Christiaensen, Demery, and Paternostro, 2002; see also Kherala et al. 2001). With regard to gender, trade expansion that creates income opportunities for women may also give them greater control over expenditures, with positive impact on child nutrition and development, as well as greater incentives to invest in girls (Paolisso et al., 2001). But the impact may depend on the type of crops (for example, Fontana, 2002, shows that expansion of non-traditional exports in Zambia may favor women more than commercial ones), and there may be a trade-offs between income-generating activities and leisure time, and perhaps it may also affect some of the time allocated for childcare (Paolisso et al., 2001, Fontana and Wood, 2000). Generally, complementary policies and investments are needed to increase the physical and human capital owned by the poor and by women, to build general infrastructures and services, to ensure that markets operate competitively, and to eliminate institutional, political, and social biases that discriminate against vulnerable groups (IFAD, 2001).

Trade Liberalization and Food Security in Developing Countries

During the current WTO negotiations, while in general asking that industrialized countries reduce their levels of protection and subsidization, several developing countries have also indicated concerns that liberalizing their own agricultural trade may affect negatively those countries' large agricultural populations, where poverty is still concentrated (WTO 2000b, 2000c, and 2000d). Developing countries have argued for a slower pace in reducing their tariffs (or maintaining and even increasing current levels) on the premise that industrialized countries should first eliminate their higher levels of protection and subsidies. The World Bank report on agriculture (1986) advised developing countries to live with those subsidies, taking advantage of lower prices for their consumers. As argued before, the problem with this advice is that even though export and domestic subsidies in industrialized countries may reduce the import bill of net importing countries, those same policies would hamper the full dynamic benefits that a sustainable agricultural sector and agro-industrialization process can have on the whole economy, given a proper framework of domestic economic policies in developing countries.

A separate concern is how to avoid sudden negative impacts on poor producers emanating from external trade conditions, whose vulnerable livelihoods may be irreparably damaged by drastic shocks (Lipton and Ravallion, 1995).

Another argument utilized for holding the line on current levels of protection in poor countries is related to fiscal matters: the importance of trade taxes as an important source of government revenues may imply that trade liberalization weakens public revenues. Yet, trade reforms such as moving from quotas to non-prohibitive tariffs, or in general the fact that trade liberalization may increase international trade, could lead to larger government revenues. The final impact of trade liberalization on government revenues is an empirical issue, and there are good economic reasons why countries, when the institutional framework allows it, should move towards more efficient and equitable forms of taxation.

Behind those concerns there is a permanent tension in agricultural policies between the desire of maintaining high prices for producers and keeping low prices for

consumers. Generally speaking, industrialized and developing countries have tried to solve this old policy dilemma rather differently. Rich countries have used transfers from consumers (through border protection) and taxpayers (through budgetary outlays) to maintain high prices for producers (OECD, several issues). For OECD countries as a whole, equivalent domestic prices exceeded world prices by about 60 percent, with the largest difference corresponding to Norway (229 percent above world prices). In the case of Japan, more than 90 percent of the transfer was paid by consumers through border protection and the rest by taxpayers as budgetary outlays, while in the case of the EU and USA the shares were about equal for consumer and taxpayer transfers (OECD, several issues).

Developing countries, on the other hand, followed historically policies of low agricultural prices to help urban populations and further the process of industrialization. The role of agriculture in development was seen as supporting the needs of industrialization through four types of transfers: labor, food (or “wage goods”) and raw materials, savings, and foreign currency (Johnston and Mellor, 1961). But by the mid-1960s, several concerns arose about the adequacy of a development strategy that discriminated against the agricultural sector. Schultz (1964) argued influentially that farmers in developing countries were “poor but efficient”, reacting with economic rationality to changes in prices and incentives. If agricultural resources were efficiently utilized, no gains could be made by transferring labor and savings to other sectors. A better strategy would be to support the agricultural sector through investments in technology and physical and human capital formation in rural areas. The idea of a technological solution to the rural problem was behind the Green Revolution of the 1970s.

Other studies in the 1970s evaluated critically the development strategies and trade regimes based on import substitution industrialization (ISI) in a number of developing countries (Little, Scitovsky and Scott, 1970; Balassa, 1971; and Krueger, 1978). They argued that ISI had a negative impact on economic efficiency and growth. Also, arguments about inelastic international demand (“elasticity pessimism”) and deteriorating terms of trade began to be challenged (for an overview of those debates see Balassa, 1986). It was also clear that poverty alleviation in developing countries was

impaired by policies that protected capital-intensive industrialization and discriminated against agriculture, negatively affecting employment and income distribution. The obvious realization that the poor in developing countries were concentrated mainly in rural areas, led to the conclusion that if poverty alleviation was to be an important objective of economic policy, then greater attention should be given to agricultural and rural development. Chenery et al (1974) presented the case for an investment program centered on the poor, especially in rural areas.

During the 1980's the emphasis shifted to the need for changes in the framework of development and macroeconomic policies. In particular, the combination of overvalued exchange rates, protection of domestic industry, and (often) explicit taxation of agricultural exports, were criticized for severely hindering agricultural growth, especially in very poor countries. Under these assumptions, faster and more equitable growth would not happen until the general policy framework was revised. The policy recommendation was to eliminate inefficient industrial protectionism, to avoid the overvaluation of the exchange rate, to phase out export taxes on agriculture, and to reduce government's involvement in agricultural markets through inefficient and many times contradictory interventions (World Bank, 1986). At the macroeconomic level, policies underscored the need of having domestic absorption in line with production (eventually expanded by sustainable external financing). These policies, when implemented, have usually been part of IMF stabilization programs and World Bank structural adjustment programs.

The results in terms of growth and equity of those programs continue to be debated (see Dorosh and Sahn, 2000; and Kherala et al., 2001), but the relevant point here is that recent research indicates that the effects of such policy reforms have been to greatly reduce or, in some cases, eliminate the past policy bias against agriculture in many developing countries (Bautista, Robinson, Tarp, and Wobst, 1998). Although further improvements in domestic policies are still needed in different developing countries, now the focus in those countries could turn again to investment policies and projects in the agricultural sector, focusing on human capital, land, water, property rights, management, technology, infrastructure, strengthening organizations of small farmers, and other forms of expansion of social capital and political participation for the poor.

Such an agricultural focus was largely abandoned during the period when improvements in the overall development strategy emphasizing economy-wide trade and macroeconomic policies appeared paramount (Diaz Bonilla and Robinson, 1999).

The question, in the context of the current negotiations, is whether after having first discriminated against the agricultural sector, and then changed to a more neutral stance, developing countries should, out of concern for small farmers, move even further towards protection of the agricultural sector, adopting policies that are the opposite of the previous low-price agricultural policies. In fact, some proposals, implicitly or explicitly suggest taxing consumers in developing countries to support producers, basically through higher levels of border protection (see Madeley, 2000). However, considering that poor households may spend as much as 50 percent of their income on food (FAO, 1993), these recommendations could have a negative impact on the poverty and food security of not only the increasing number of poor urban households and landless rural workers, but also poor small farmers, who tend to be net buyers of food. There has been a steady shift in the locus of poverty, food insecurity, and malnutrition from rural to urban areas in many developing countries (Ruel et al. 1998, Ruel et al. 1999, Haddad et al. 1999, and Garrett and Ruel 2000). Urbanization in developing countries is posing new questions regarding economic and social policies in general, and also in relation to the impact of trade and trade policies on poverty and food security. A similar profile of trade protection (or trade liberalization) will have different implications for developing countries with important contingents of urban poor affected by food insecurity, than for other poor countries where a majority of the population affected by poverty and food insecurity lives in rural areas and works in agricultural production. Of course there are also vulnerable rural groups which are net consumers of food, and for which taxes on food imports may have impacts more comparable to food-insecure urban groups, depending on the balance between possibly higher incomes and larger food costs. The impact of prices on vulnerable rural groups then depends on the structure of farming system and the nature of poverty and food insecurity (IFAD, 2001).

In general, an import tax has a bigger incidence on poor consumers (who spend a greater percentage of their incomes on food), and is received mostly by bigger agricultural producers, which have larger quantities of products to sell. Also, trade

protection for any sector usually implies negative employment and production effects in other sectors, and the general effect of widespread trade protection is a reduction in exports. There are also dynamic considerations, such as rural-urban migration. A policy completely tilted towards low prices for the consumer would damage the rural sector and exacerbate migration to the cities. Therefore, a balanced rural-urban policy, which includes but goes beyond food prices, should consider the short and long-term implications of those policies.

In summary, the policy dilemma between high prices for producers (which would help poor, small farmers, but also big ones, and the latter proportionally more) and low prices for consumers (which would benefit poor consumers, but not only them) cannot be wished away. The problems faced by poor farmers and poor consumers are more adequately addressed through policies and investments targeted to them directly, rather than using indirect methods such as trying to influence food prices, which inevitably lead to leakages (i.e. non-target groups receiving part, in some cases a substantial one, of the benefits) and additional distortions.¹⁴ The focus should be mostly on social groups rather than crops and their prices. Also, given the important growth multiplier effects of agriculture especially in poor developing countries, policies that ignore or, even worse, discriminate against agriculture must be avoided. The best approach for developing countries to support agriculture is to eliminate biases against that sector in the general policy framework, and to increase investments in human capital, land tenure, water access, technology, infrastructure, nonagricultural rural enterprises, organizations of small farmers, and other forms of expansion of social capital and political participation for the poor and vulnerable. At the same time, developing countries may legitimately insist that industrialized countries reduce their higher levels of subsidization and protection, and ask for policy instruments to protect the livelihoods of the rural poor from import shocks that could cause irreparable damage. The question in the context of the WTO negotiations is whether the current AoA and its possible future modifications would allow or limit the range of policies needed to make sure that increased trade

¹⁴ See among others, Pinstrup-Andersen, 1988 on consumers, and Diaz-Bonilla 1982 and 1990, on survival strategies and rural actors. The issue of defining the interventions in terms of people has been lately emphasized again by the approach based sustainable livelihoods; see for instance Adato M. and R. Meinzen-Dick, 2002.

opportunities lead to adequate rates of inclusive, sustainable and stable growth, contributing to reductions of poverty and improvements in food security. The legal issues involved are discussed immediately.

TRADE, TRADE LIBERALIZATION, AND FOOD SECURITY: LEGAL ISSUES

Background

The AoA has been subject to several criticisms. A valid criticism is that there are imbalances in the AoA because industrialized countries have been able to secure exemptions for some of their policies (like the Blue Box) and were allowed to continue using significant amounts of expenditures for domestic support and export subsidies. Rich countries have the legal room and the resources to implement the variety of policies allowed under that legal text, while developing countries, although having legal room of maneuver, lack the needed financial resources.

Other criticisms of the AoA seem less compelling. For instance, some have suggested that the WTO legal texts tightly constrain developing countries in legal terms, not allowing them to implement policies needed for their economic development, to combat poverty or to attain food security. In a similar vein, it has been argued that the legal exemptions allowed for developing countries are of no use to them, mainly because the policies permitted are very difficult to implement due to the financial, technical, and human resource requirements (Solagral, 1999; Murphy, 1999; and UNCTAD, 2000). Usually, the final conclusion of this line of analysis is that developing countries need additional “flexibility” mainly in terms of increasing the levels of protection allowed. Some of those arguments appear to suggest that trade protection measures are simpler to implement institutionally and have no costs to the economy, compared to the budgetary expenditures required to implement Green Box and other policies allowed under the AoA.

However, the argument that legal exemptions allowed for developing countries under the WTO are not very helpful because they “cost money” focuses only on the impact on citizens as taxpayers and ignores that tariff and non-tariff barriers to trade are

equivalent of taxes paid by the citizens as consumers.¹⁵ As argued above, protectionist policies have real costs to the economy, with potentially important negative effects on the poor. Also, under the AoA developing countries do not seem to have significant legal constraints to adopt a variety of interventions to support agriculture, particularly regarding policies and programs that really improve competitiveness and equity, given the resources they possess. Finally, it is not clear that the institutional requirements to run efficient and honest customs administrations that can adequately manage the border measures are less exacting than organizing, for example, an efficient system of agricultural research and extension. Whatever the institutional requirements, it is obvious that the interventions allowed under the AoA without restrictions, such as research, extension, infrastructure, and irrigation, to name a few, are the real foundations for increases in production, productivity, and competitiveness. Trade protection measures, on the other hand, are mostly internal transfers (and largely regressive in the case of food), with no clear link to the real sources of agricultural productivity growth.

A related issue is the argument for increased flexibility. In trade, and other, negotiations the parties usually try to limit other peoples' options while attempting to retain flexibility for oneself. But it seems dubious that industrialized countries would agree to grant developing countries ample flexibility, while renouncing theirs. Of course, in any balanced negotiation, all parties would become committed to some mutually agreed common rules. Developing countries, as weaker players in the global arena, need

¹⁵ A common mistake is to view import taxes as revenues paid by foreigners and collected only by governments. In fact, simple economic analysis shows that consumers usually pay the larger percentage of the sum of government revenues and associated transfers, and producers generally collect the larger percentage of those payments. As discussed before, only a small fraction of total consumption of food products is imported in developing countries, but border restrictions increase prices for the total amount of the consumed product, which includes the larger percentage of domestically produced food resulting in a direct transfer from consumers to producers. This same fact limits also the suggestion of using the receipts from import taxes to subsidize food consumption of the poor (FAO, 2000; paper 6; footnote 4). To the extent that the volume of taxed commodities is only a fraction of total domestic consumption, and that the poor population may represent, as a whole, even though not necessarily per capita, a sizable percentage of that domestic consumption, government revenues from taxing imported commodities would typically not be enough to compensate poor consumers. The case of developed countries, where the incidence of poverty is smaller and which have additional fiscal resources, is different. They can tax consumers in general with border protection for food, but then, at the same time, are able to subsidize poor consumers through different targeted policies financed by general revenues.

an international legal system that limits the ability of larger countries to act unilaterally. The argument that the WTO is completely dominated by industrialized countries and by transnational corporations, fails to recognize the fact that the latter would have even more power without an international legal framework. Moreover, there are arguments why some lack of flexibility may be beneficial to developing countries (Oyejide, 2000). First, the implementation of internationally negotiated rules may limit the power of special interests and arbitrary government measures within developing countries, helping to strengthen domestic legal and institutional frameworks (Diaz-Bonilla, 2000). Second, it has been shown that investment is in part related to the stability and certainty of the policy framework (Campos, Lien and Pradhan, 1999; Solimano, 1989). A legal framework, internationally sanctioned, that limits flexibility (and therefore uncertainty) should help investment.

A separate issue (discussed later in this section) is whether developing countries should take a more deliberate and slow approach to reduction of trade barriers, particularly until the glaring imbalances between industrial and developing countries in protection and subsidies are eliminated. There is a compelling argument to be made that the AoA—with the legal possibilities allowed to industrialized countries to subsidize exports, to provide trade-distorting domestic support, and to otherwise engage in protectionist agricultural policies—still leaves developing countries at a disadvantage in world markets. Therefore, an important issue is whether the Green Box and other domestic support measures should be further tightened because industrialized countries, with their financial, human, and institutional capabilities, would abuse them.

Still, this does not detract from the main issue that to achieve the objectives of agricultural development and poverty alleviation, developing countries must design adequate domestic policies and investment programs in human capital, infrastructure, technology, regularization and expansion of land ownership by small producers and landless workers, and, in general, promote the adequate functioning of product and factor markets. The AoA does not restrict those policies. It can be argued that the main problem for developing countries is not necessarily the lack of legal room for the implementation of efficient and equitable policies, but the need for funds (at the national and international levels) to be able to implement those policies, and the existence of still

high levels of subsidization and protection of the agricultural sector of industrialized countries.

This discussion has implications for the negotiating positions of the developing countries. It has been already mentioned that developing countries may play “offense” or “defense” in the negotiations, or some combination of both. In analyzing the merits of those approaches, there are at least two considerations for developing countries to ponder. First is the need to be realistic about the resources they have to carry out the policies discussed in the negotiations. If in adopting a defensive strategy developing countries are asking for legal room to apply subsidies that they will not be able to use later for lack of money, their negotiating position may be very weak. Industrialized countries will be only too happy to grant developing countries concessions that will have no effective implications, while, in return, extracting a price for the “concessions” granted. For instance, proposals that suggest a *de minimis* of 20 percent of total agricultural production for developing countries should be compared with the total budget of the Ministries of Agriculture or similar agencies (after discounting salaries), to see if enough fiscal resources to implement the concessions requested exist. Second, what really matters is not a title, such as “Development Box” or “Food Security Box”, but the content, i.e. the possible changes in legal texts that developing countries consider could satisfy their need for special and differential treatment. In defining that content developing countries should start from the substantial legal room they already have under the AoA, and propose specific changes in language utilizing current WTO texts. It would be most unfortunate if developing countries pay a price in the negotiations just because some changes in current language are repackaged into a new “Box” that is then presented as a substantial concession from industrialized countries. With those caveats in mind, some of the legal and other issues raised by special boxes for development and/or food security reasons, are examined in the following section.

Development and Food Security Boxes

During the negotiations and also in academic and civil-society debates, the notions of a Development Box and a Food Security Box have been discussed. Although

several of the suggested policies to be included as special and differential treatment (SDT) in those boxes are similar (see Tables 11 and 12), there may be a key difference regarding the possible users of the SDT. In principle, a Development Box would come under the “enabling clause” (officially known as the “Decision on Differential and More Favorable Treatment, Reciprocity and Fuller Participation of Developing Countries”, adopted under GATT in 1979 ¹⁶). This clause, which allows developed members to give differential and more favorable treatment to developing countries, has been usually interpreted as applying equally to all developing countries (although some additional flexibility is allowed for least developed countries). During the current negotiations some of the debate centered on whether the “enabling clause” should be reopened or not, and whether the SDT should or should not be equally available to all developing countries (WTO, 2002). A Food Security Box, if defined for food insecure countries according to some quantitative indicators, may face less controversy on this regard.

A key policy issue in this regard is the discussion about what is the relevant level (global, national, household or individual) to address food and nutrition security. The special and differential treatment granted at the national level has to be translated into adequate policies that operate at the household and individual level to have an impact on food and nutrition security. Also, as indicated before, a focus at the level of staple crops considered to be relevant for food security may not necessarily be the more effective and equitable way to address problems of poverty and hunger. It is usually more equitable and effective to design policies considering vulnerable groups rather than crops or other more indirect forms of targeting.

Another issue is the discussion about granting greater flexibility for development, for food security reasons or both, mainly by broad exemptions for some crops from disciplines (at the limit excluding them from the AoA), or, rather, by the definition of specific exemptions and special treatment (placing them firmly within the AoA). Usually the proposals for greater flexibility are mostly “defensive”, and translate into granting more domestic support, imposing higher tariffs for food security reasons, and the use of quicker forms of safeguards and trade remedies against foreign subsidies and dumping.

¹⁶ The Enabling Clause is the WTO legal basis for the Generalized System of Preferences (GSP) (through which developed countries offer, unilaterally, non-reciprocal preferential treatment to products originating in developing countries), and for regional arrangements and trade concessions among developing countries.

Some of those proposals also include more proactive measures such as better market access to developed countries' markets, binding commitments on food aid and technical assistance, and the possibility of international funds and food stocks to help vulnerable countries. A summary is presented in Tables 11 and 12. In what follows a possible combination of offense and defense measures is presented.

Export Subsidies

The use of export subsidies has been widely criticized as unfair and disruptive of international trade. In complete contrast with industrial goods, this practice has not yet been completely eliminated for agricultural products, many of which are processed products. Therefore, the differential treatment of export subsidies under the current agreements of the World Trade Organization (WTO) is not only between primary agriculture and industry, but also between those industries based on agricultural raw materials (for which export subsidies are allowed) and the rest of the manufacturing sector (for which those unfair trade practices have been banned) (Diaz-Bonilla and Reza, 2000). Industrialized countries have been the main source of subsidized agricultural exports over the years.¹⁷ Agricultural export subsidies have proved very disruptive both for developing countries that are net agricultural exporters, but also for the agricultural producers in net importing developing countries, which are displaced by this unfair competition. An important percentage of those export subsidies do not go to the poorest countries, and some of the products covered are not necessarily those that may be more directly linked to the alleviation of food security problems. Therefore the special treatment of agricultural export subsidies should be eliminated in the current negotiations, placing them under the Agreement on Subsidies and Countervailing Measures.

A related subject is the operation of state trading enterprises, which may require increasing disciplines and transparency on practices that may be equivalent to subsidies or dumping on the export side, or hidden trade barriers, on the import side. Finally, it is

¹⁷ From 1986-1997, those export subsidies amounted to about 135 billion US dollars (see Leetmaa and Ackerman, 1999, for European and US export subsidies). That is the equivalent of almost 13 percent of the value of all agricultural exports by the developing countries of Africa, LAC and Asia (minus China) combined, during the period (Diaz-Bonilla and Reza, 2000).

important to integrate in a unified framework the disciplines related to the continuum of transactions involving agricultural products, particularly the interface of export subsidies with food aid and export credits.

The developing countries' position is to maintain the special and differential treatment exempting them from lowering subsidies related to marketing costs and internal transport and freight charges (in Article 9 d, and e). At the same time, developing countries have an interest in stricter disciplines on export taxes and export controls that may exacerbate price fluctuations in world markets and limit access to food.

Market Access

A second set of issues is the opportunities for expanded market access. They will depend on increasing the volume of imports allowed under the current regime of tariff-rate quotas (TRQs); on a more transparent and equitable administration of those TRQs; on simplification of some complex tariff structures that include combinations of normal and ad-valorem tariffs, complexity which is compounded by seasonal adjustments in some cases; on further reduction of tariffs, particularly those still very high in some key products, such as fruits and vegetables, sugar, meat and dairy products, among others; and on completing the process of tariffication in the cases where exemptions were granted.

Tariffs can be capped to a uniform maximum, probably not more than 50 percent. Developing countries should negotiate possible reductions from their bound tariffs rather than utilizing applied tariffs, as some industrialized countries have suggested.

The elimination of tariff escalation is an important subject for developing countries: this practice undermines their possibilities of generating local employment and increasing the value added of their products. Tariff escalation has been discussed at least since the Kennedy Round (Yeats, 1974). Although this characteristic of the tariff structure has diminished somewhat after the Uruguay Round, significant levels of tariff escalation will still remain after the full implementation of the Uruguay Round (Lindland, 1997; OECD, 1997). In particular, the OECD (1997) documents important tariff escalation in coffee and cocoa products, which can in part explain the increasing share of industrialized

countries in the international trade of processed goods using those raw materials (Diaz-Bonilla and Reza, 2000).

Another issue of market access is the continuation of the Special Safeguard (SSG) established in the AoA. It was allowed for products that underwent tariffication, but it had to be specifically designated for the eligible products. A total of 38 countries have established SSG for about 6072 tariff items; about 3600 tariff items belong to industrialized countries (WTO, 2000a). Developing countries, by and large, resorted to binding commitments as an alternative to the tariff equivalent of the existing border measures, and therefore could not invoke the SSG. While some developing countries want to eliminate the SSG, others are asking to be able to use it. In general, the SSG acts as a variable levy, is not transparent, and has the potential of being very disruptive of trade. Probably for developing countries it would be more adequate to ask for the termination of the SSG, while reserving the possibility of a streamlined safeguard for a very limited number of products for food security reasons only (see below).

Domestic Support

A third set of issues relates to domestic support. The final agreement reached at the Uruguay Round was weakened when the measure of support was transformed from a product-based one to an aggregate value for the whole agricultural sector, and when the main domestic subsidies of the European Union and the US (at that time) were kept outside the disciplines in what was called the "blue box". With the changes in the 1996 Farm Bill in the US, the most important user of Blue Box measures is the European Union. However, the current version of the US Farm Bill brings back domestic subsidies to American farmers without the constraints of previous set asides (Orden, 2002). On the other hand, many developing countries have dismantled or significantly reduced their own domestic support for agricultural producers, mainly because of fiscal constraints and concerns about inefficient policies, usually as part of structural adjustment programs supported by financial international organizations and aid donors. But the possible benefits that these countries and the world may gain from following their comparative advantages are drastically thwarted by the subsidies of developed countries.

In an attempt to discipline further domestic supports, some countries have proposed to tighten the criteria for the Green Box, the reduction of the measure of support by product, and the elimination of the exemptions considered under the Blue Box.

Another suggestion has been to put a cap to all or a specially defined subset of domestic support measures as a percentage of the total value of agricultural production (WTO, 2000b and 2000c). The argument that a uniform limit defined in percentages would contribute to level the playing field that is now heavily tilted in favor of industrialized countries (which have the legal room under the WTO and the money to distort production and trade in their favor), seems compelling.

Sanitary and Phytosanitary Measures

A fourth set of issues relates to sanitary and phytosanitary measures (SPS), as well as other technical, quality, and environmental standards. These measures can be, and have been, used as barriers to trade. Concerns about the possibility that the liberalization of agricultural trade achieved under the AoA could be negated by manipulation of those regulations led to the negotiation during the Uruguay Round of two separate documents. The first was the Agreement on SPS measures, directly related to human, plant and animal health issues linked to trade in agricultural products. The second was the Agreement on Technical Barriers to Trade (TBT), which covered technical regulations and standards, and conformity assessment procedures.

Developing countries have complained over the years that SPS measures and inspections tend to become stricter when there are agricultural surpluses in the domestic markets of industrialized countries. They have also criticized the long periods required by industrialized countries to complete the pest and disease studies needed to allow the import of new agricultural products from developing countries (see Matthews, 1994 for other SPS issues). Since the Uruguay Round Agreement, and in the preliminary discussions related to the continuation of the negotiations mandated in Article 20 of the AoA, some developing countries have argued for greater flexibility in the implementation of their obligations under the SPS Agreement. Finger and Schuler (2000) have calculated the relatively important budgetary costs that some of the operational requirements of

different WTO commitments (and not only the SPS Agreement) may impose on low income developing countries. They argued that WTO regulatory issues should be in alignment with the real developmental needs of developing countries, separately from compliance with WTO legal texts.

For instance, SPS issues related to human health should be approached as part of the improvements needed to protect the local population from food-borne diseases and not only as a way to comply with trade regulations. Similarly, tackling animal and plant health problems must be seen as part of SPS requirements to increase production and productivity in developing countries. As a general proposition, it seems imbalanced to ask low-income countries to devote to the administrative machinery required to implement WTO obligations resources that represent, as a percentage of the GDP, a larger share than what industrialized countries assign to similar functions.

On the other hand, a strong SPS framework may be important for developing countries, not only because a competitive export position requires establishing and maintaining the sanitary and quality requirements for their products, but also as a way of improving health conditions in the developing countries, to the extent that best practices and standards would then be more widely applied in those countries. Probably the most adequate approach for developing countries is to insist on receiving the technical and financial assistance considered in the SPS Agreement (Articles 29 and 30) to build and improve their own systems of quality control and health and safety standards. These systems should be centered on their own needs to improve health and sanitary domestic conditions, and the regulatory burdens of compliance should, at the very least, not represent shares of the GDP larger than what industrialized countries devote to similar functions.

Food Security and Poverty

The AoA includes different clauses that are directly or indirectly related to food security and poverty issues. The discussion that follows focuses mostly on legal aspects, but it does not analyze the economic advantages or disadvantages of the different alternatives.

Food Security Stock. The most obvious instrument available in the AoA is the use of stocks for food security reasons. The Green Box measures (Annex 2 of the AoA) include “all support policies provided through a publicly-funded government program not involving transfers from consumers” and which do “not have the effect of providing price support to producers”. They are exempted from reductions provided they comply with other specific criteria established in that Annex (Annex 2, paragraph 1, of the AoA). The list of those programs and the specific policy criteria and conditions include, among others public stockholding for food security purposes. The stocks must be an integral part of a food security program identified in national legislation. It may include government aid to private storage of products as part of such a program. They must correspond to predetermined targets related solely to food security, the process of stock accumulation and disposal must be financially transparent, and the products must be bought “at current market prices and sales from food security stocks shall be made at no less than the current domestic market price for the product and quality in question” (Annex 2, paragraph 3).

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

Emergency food stocks may have an important role to play in food security arrangements. Carrying stocks as an insurance mechanism is different from using stocks to stabilize domestic grain prices, which has proved expensive and relatively ineffective (Hazell, 1993; Knudsen and Nash, 1990). The AoA establishes the conditions for those stocks, which must be built based on clearly defined targets, for instance as a percentage of total consumption. Also, it would help public finances to limit the number of key food items (no more than three to five) to be stocked. Hazell (1993) suggests that relatively small percentages of total consumption may suffice to act as an insurance mechanism

(using McIntire (1981), which calculates that stocks of five percent of total consumption may be enough for SSA countries). Also the AoA requires transparent financial arrangements, a sensible requirement to avoid waste and corruption.

The key point, though, is that those stocks must be bought and sold at market prices. The language is clear on sales from the stock: those prices are “current domestic market prices” (which includes whatever level of tariff protection the country may have). But the text is less clear in the case of buying food products. As indicated, building stocks for food security reasons is different from using stocks to stabilize domestic grain prices, which may be very expensive. For poor countries it makes sense not to add to the costs of the food security program through the use of non-market-based administered prices, which tend to generate losses buying high to support farmers and selling low to subsidize consumers. In any case, if a government buys at harvest time say 10 percent of the production of a crop paying market prices to achieve the stock to consumption ratio defined for food security reasons, then that operation would give some price support with respect to the counterfactual of no intervention (Islam and Thomas, 1996: p 58-61). But all the operations will be conducted at market price, ideally using some sort of auction. Following those rules, the program should be part of the Green Box and not subject to restrictions on the AMS.

Some appear to have interpreted the wording of the AoA as either forcing the purchase of food items at world prices (because of the reference to the external price, which is the one cited in the Schedule of the countries but it is not the current world price) or that there are no alternatives to buying at administered prices. Here a different interpretation is offered where buying at the domestic market price the intervention remains under the Green Box. The negotiations may add some language to make the text clearer, avoiding any doubts about the applicability of this Green Box measure: one possibility is that LDCs and countries that are food insecure as defined by some objectives indicators are presumed to be in compliance with the AoA when they build food security stocks by buying at domestic market prices a small number of pre-specified products in volumes not exceeding some limited percentage of domestic consumption (for example, stocks for not more than 10 percent of domestic consumption for up to 3 products).

If a developing country decides to use administered prices instead of the prices prevailing in the domestic market, then, according to the footnote, the difference with the external reference price (which, again, is not the current world price, but the 1986-88 price established for the original calculations) must be counted as part of the AMS. Yet, if the food security stock does not exceed, say, 10 percent of consumption, it would take a relatively large price subsidy (along with a large percentage of imports in domestic consumption), for a developing country to exceed the 10 percent de minimis exemption per product. In that case, the program would have changed from food security to price support, and it would most likely become financially unsustainable, regardless of its status under the AoA.

Domestic Food Aid. A second instrument for food security, which is also part of Green Box measures (Annex 2), is domestic food aid. According to Annex 2, paragraph 4, food aid must target the population in need subject to clearly-defined criteria related to nutritional objectives; food purchases must be made at market prices; the financing and administration of the aid shall be transparent; food aid can be in the form of direct provision of food or the provision of means to allow eligible recipients to buy food either at market or at subsidized prices. In the case of developing countries, a footnote indicates that “for the purposes of paragraphs 3 and 4 of this Annex, the provision of foodstuffs at subsidized prices with the objective of meeting food requirements of urban and rural poor in developing countries on a regular basis at reasonable prices shall be considered to be in conformity with the provisions of this paragraph”. Again, the AoA allows food security interventions, but imposes some sensible requirements, such as to have a clear plan with well-defined nutritional criteria, focusing on “population in need”. Moreover, in the case of developing countries, there may be subsidized interventions for urban and rural poor. As in many instances, the issue is not legal restraints under the AoA, but rather how to design and finance adequate interventions (see Coady and Skoufias, 2001 for a discussion of different interventions)

Support to Poor Producers and Production for Food Security. Although the formation of stocks, as indicated, can also help producers if the buying is timed

adequately (Islam and Thomas, 1996), the two measures discussed so far operate mostly from the consumption, or demand, side. But developing countries usually emphasize the production side of food security. Several of them have expressed concern that agricultural and trade policies may create problems for their large rural populations, where poverty is still concentrated and which are basically agricultural producers (WTO 2000b, 2000c, 2000d, and 2001). These concerns are related to issues of domestic support (how to provide meaningful support to agricultural producers, specially small farmers), market access (particularly the impact of further liberalization and how to manage import surges), and export subsidies (that may displace local producers).

Regarding domestic support, it has been already argued that for industrialized and developing countries, the AoA allows a great latitude in domestic support policies: Green Box measures (Annex 2), Blue box (Article 6, paragraph 5), the *de minimis* exemptions (Article 6, paragraph 4 b), and the fact that the Aggregate Measure of Support (AMS) was changed from being product specific to an aggregate for all products (Article 6 paragraph 1). Developing countries, in addition to a *de minimis* exemption of 10 percent (as already indicated), were allowed to reduce their levels of domestic support less than non-developing members of the WTO and to implement the commitments in a period of 10 years instead of 6 (article 15, paragraph 2). Least Developed Countries are completely exempt from any reduction in domestic support (Article 15, paragraph 2).

Additionally, Article 6 paragraph 2 exempts developing countries from reduction commitments in yet other categories of domestic support. They include “measures of assistance, whether direct or indirect, to encourage agricultural and rural development” which “are an integral part of the development programs of developing countries”. The article mentions investment subsidies generally available to agriculture; agricultural input subsidies to low-income or resource-poor producers; and support to eradicate illicit narcotic crops through diversification. Article 6.2 concludes saying that “domestic support meeting the criteria of this paragraph shall not be required to be included in a Member’s calculation of its Current Total AMS”.

Therefore a developing country is legally entitled under WTO to provide additional investment support to their agricultural producers provided that the measures are “an integral part of development programs of developing countries”, or, in the case of

input subsidies (from credit to fertilizers or water) if they are given to “low-income or resource- poor producers”. By extension of the criteria of the Green Box, it could be argued that these interventions would be more protected from challenges, if they were part of clearly defined and publicly-funded government program (Annexes 2.1 and 2.5). Article 6, paragraph 2 has the advantage, from the point of view of equity, that it encourages developing countries to design specific programs for rural development or alleviation of rural poverty, instead of resorting to general and non-transparent subsidy schemes that may benefit richer farmers or be wasted in corruption. Article 6.2 would, for example, allow the use of input subsidies to poor farmers to promote production of a staple crop as part of a rural development program for such producers, without having to count those expenditures under the AMS, and therefore, without having to reduce them within the WTO commitments. The only restriction is that those subsidies may be actionable under Article 13b, particularly if they exceed the budgetary limit of subsidies decided (not necessarily granted) in 1992 by product (13b, ii and iii).

As an example, suppose that a low-income country decides to subsidize poor farmers for their use of fertilizers in a specific staple crop. Suppose that the program is so highly successful that, as a result, poor farmers not only supply the additional domestic demand (beginning with their own requirements and including urban population) but also displace previous imports in that product. Suppose further that the expenditures of the program in that low-income country have exceeded those approved for that crop in 1992. Then those countries that were suppliers of that market and that now may have been displaced, may claim “serious prejudice” (as in Article XVI, paragraph 1, of GATT 1994 or Articles 5 and 6 of the Subsidies Agreement), or “non-violation nullification” or “impairment of the benefits of tariff concessions” (as in Article XXIII, paragraph 1(b) of GATT, 1994). Some have interpreted Article 13 as prohibiting domestic subsidies in excess of 1992 budgetary limits (Solagral, 1999). In fact, those subsidies are not prohibited, but may be “actionable”, meaning that the complaining WTO member must support its claim proving either serious prejudice, on one hand, or nullification or impairment of benefits, on the other.

The whole scenario for such complaints appears unlikely for most, if not all, poor developing countries, because it must combine a highly successful program that displaces

imports (when in fact most of the production of such a product would go to expanded domestic consumption) or reduces prices significantly in the domestic market, and the existence of a significant export market prior to the program (to make it commercially worthwhile to initiate a WTO complaint). Also, there must be a WTO member (basically an industrialized country or a higher income developing country, considering the origin of most food exports), willing to incur in the public relations costs to sue a poor country on a program aimed at poor farmers for production of food. Yet because the unlikely sometimes happen (particularly difficult to judge given the willingness of different governments in the WTO members to place human decency concerns above other considerations), the current agricultural negotiations may be well advised to clarify in greater detail the interface between the *de minimis* exemption (Article 6.2, and Article 13) particularly for poor countries with problems of food insecurity.

A possibility is to follow the same approach as for food stocks and include language in the AoA specifying that LDCs and countries that are food insecure as defined by some objectives indicators, are exempted from the 1992 limits of Article 13, not only in regard to Article 6.2, but also regarding the *de minimis* exemption for two or three crops designated for food security reasons.

Another issue linked to Article 6.2 is the meaning of “low-income or resource poor producers” (LI/RP). A possible approach is to take the usual measure of one dollar (or two dollars) a day, as the poverty line used for international comparisons, or a relative measure within the country (for instance, producers with less than 40 percent of national income per capita). In general, if food insecure countries are defined according to objective criteria, some language can be included to the effect that they are presumed in compliance with the criteria of Article 6.2. for low income and resource poor producers. Other developing countries that are not food insecure will have to show that the small farmers supported fall under the quantity limits for incomes.

Special Safeguard (SSG) and Other Trade Remedies for Food Security. As mentioned, the SSG is available only to countries, mostly developed ones, which have border tariffs. Some developing countries have argued for extending the utilization of the SSG also to them. Other developing countries, however, want the SSG eliminated and a

new special safeguard created for food security reasons. Conceivably this can be done under the common safeguard of the Emergency Action on Imports of Particular Products (Article XIX of GATT 1994), but including some modifications such as (i) streamlined and faster procedures for a limited number of designated crops for food security reasons, and (ii) exemptions from the need to offer compensations, linked to the temporary use of the safeguard (see Sharma 2000).

Similarly, streamlined procedures can be defined to counter export subsidies (and, conceivably, also dumping activities) that may affect the group of two or three designated crops with food security implications in food insecure countries. An important first step in that direction, which would benefit all developing countries, would be to apply the common WTO rules for export and other subsidies in the Agreement on Subsidies and Countervailing Measures (ASCM) (including the possibility of claiming serious prejudice because of domestic subsidies of industrialized countries), instead of using, as is now the case, the stricter requirements of Article 13 of the AoA to apply countervailing duties and seek other trade remedies. In the case of the designated food security crops for food insecure countries, the latter may be allowed to apply provisional measures (countervailing duties) under Article 17 of the ASCD with more streamlined procedures than those considered in article 17.1 (a), (b) and (c); those procedures can be initiated by the government; and the countervailing duties can be applied before the period indicated in 17.3 and last for longer periods than the four months indicated in 17.4.

Food Aid, Access to Food, Foreign Aid, and Price Volatility. Current negotiations should also consider carefully other issues of food availability and price volatility. A general concern is the provision of adequate levels of food aid, which have declined in recent years, and the avoidance of cycles that tend to reinforce, instead of counteract, situations of oversupply and shortages (i.e. the fact that there is excess of food aid when world supplies are abundant and lack of it when supply conditions are tight). Food aid should be made available in grant form; focused towards poor countries and social groups; and delivered in ways that do not displace domestic production in the receiving countries.

It is also necessary to provide technical assistance and financial support to develop agriculture in food insecure countries, and to maintain and expand financial facilities (both multilateral and bilateral) to help with short-term difficulties in financing food imports. A special aspect is to make sure that export controls and export bans on food items are tightly disciplined so as not to hamper access to food by importing countries. Improvements in early warning systems of food shortages, in weather forecast, and in transportation and storage, along with an adequate programming of food aid and financial facilities for emergencies, should help net food importers.

The issue of volatility in agricultural prices must also be monitored carefully. As shown in Table 7 volatility of real agricultural prices in world markets in the last half of the 1990s—since the implementation of the World Trade Organization (WTO) agricultural agreements—does not seem to be higher than it has been for the whole period since the 1960s, and is even lower for some products. Yet, it is less clear what has happened with the volatility of agricultural prices within developing countries, which also depends on domestic policies. For the lowest income brackets of the population food constitutes 50 percent or higher of total expenditure (FAO, 1993). The poor are therefore the most vulnerable to large swings in food prices. At the same time, however, if domestic price stabilization schemes maintain prices higher on average than what would have been the case without them, then there may be a trade off for the poor: trade liberalization may lead to more volatile but lower prices on average, while with stabilization schemes prices albeit more stable would be higher possibly making more people food insecure (Sumner, 2000). In any case, it is important to devise mechanisms, consistent with WTO commitments, to provide adequate safety nets for those more vulnerable and the worst hit. Further analysis is needed on the potential costs and benefits of price instability and mechanisms to stabilize prices, incomes and consumption.

CONCLUSION

Can the WTO legal framework protect the interests of the world's poor and hungry? Obviously, the WTO cannot make sure that everyone on the planet gets enough

to eat. But it can help to prevent unfair competition that hurts the poor. In the negotiations developing countries are legitimately insisting that industrialized countries reduce their higher levels of subsidies and protection first. The possible negative effects on some developing countries of higher food prices and lost preferences caused by the liberalization of markets in rich countries are better addressed through cash grants or other financial schemes to compensate those countries affected, rather than maintaining protection in the industrialized world. Also, WTO country members may need to set up a new category of "food-insecure" countries, and make sure that they have the policy instruments to protect the livelihoods of the rural poor. Some of the SDT discussed in the previous sections has been cast in terms of countries and crops. However, it is important to remember that policy interventions based on countries or crops may not necessarily address the problems of specific poor farmers and poor consumers, and may have larger leakages and secondary distorting effects. For instance, increasing protection for food crops acts as a regressive tax, with a larger incidence on poor consumers and whose benefits accrue mostly to larger farmers. If the concern is about vulnerable groups it is better to target them for investments and subsidies (an approach accepted under the AoA). Many of the food security concerns can be addressed with specific clarifications and changes in the current language of the AoA, whether they are called "development" or "food security" boxes or not. While seeking the changes suggested (or some others) in the negotiations, food insecure developing countries may want to ensure that they are not asking for legal room to implement policies that they will not be able to utilize later because lack of financial resources. One of the main imbalances in world agriculture is that industrialized countries have enough legal room under the WTO to subsidize their own agriculture and the resources to do it, while many developing countries although may not be legally constrained to invest in food security, lack the financial, human, and institutional resources to do it. This should be recognized by ensuring that agricultural trade negotiations proceed in parallel with increased funding by international and bilateral organizations for agricultural and rural development, food security, and rural poverty alleviation.

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Table 1. Calories per capita per day

	1960s	1970s	1980s	1990s	1995-99	Last/60	Last/70	Last/80
World	2347	2453	2636	2750	2790	1.189	1.137	1.058
Industrialized Countries	2956	3079	3201	3337	3359	1.136	1.091	1.049
Developing Countries	2036	2173	2424	2607	2667	1.310	1.227	1.100
Least Developed Countries	2016	2018	2078	2067	2073	1.029	1.028	0.998
Africa South of Sahara	2070	2077	2075	2160	2189	1.058	1.054	1.055
Transition Markets	3236	3366	3383	2992	2906	0.898	0.864	0.859

Source: Díaz-Bonilla et al., 2002

Table 2. Proteins per capita per day (grams)

	1960s	1970s	1980s	1990s	1995-1999	Last/60	Last/70	Last/80
World	64	65	70	73	75	1.170	1.143	1.074
Industrialized Countries	90	94	99	103	104	1.155	1.103	1.050
Developing Countries	51	53	59	66	68	1.326	1.278	1.148
Least Developed Countries	50	51	51	51	51	1.008	1.006	0.990
Africa South of Sahara	53	52	51	52	53	1.000	1.009	1.024
Transition Markets	97	102	103	90	86	0.887	0.842	0.834

Source: Díaz-Bonilla et al., 2002).

Table 3. Number of malnourished children since 1970

Regions	1970	1975	1980	1985	1990	1995	1997
	(millions of children under age 5)						
Latin America and the Caribbean	9.5	8.2	6.2	5.7	6.2	5.2	5.1
Sub-Saharan Africa	18.5	18.5	19.9	24.1	25.7	31.4	32.7
West Asia/North Africa	5.9	5.2	5.0	5.0	n.a.	6.3	5.9
South Asia	92.2	90.6	89.9	100.1	95.4	86.0	85.0
East Asia	77.6	45.1	43.3	42.8	42.5	38.2	37.6
All regions	203.8	167.6	164.3	177.7	176.7	167.1	166.3

Source: Smith and Haddad (2000) from 1970 through 1995; 1997 data are the IMPACT base-year values extrapolated from 1995 values using the IMPACT model (Rosegrant et al, 2001).

Note: n.a. is not available.

Table 4 Volatility for food production

	1961-2000	1991-2000	1995-2000
Asia	0.150	0.100	0.050
Africa	0.110	0.080	0.060
LAC	0.110	0.080	0.050
EU	0.060	0.040	0.030
Japan	0.050	0.040	0.030
US	0.050	0.040	0.020

Source: Díaz-Bonilla et al., 2002

Table 5 Volatility for calories consumption

	1961-2000	1991-2000	1995-2000
Asia	0.051	0.030	0.012
Africa	0.056	0.031	0.014
LAC	0.041	0.022	0.010
EU	0.023	0.016	0.007
Japan	0.012	0.004	0.001
US	0.014	0.006	0.005

Source: Díaz-Bonilla et al., 2002

Table 6 Volatility for protein consumption

	1961-2000	1991-2000	1995-2000
Asia	0.057	0.034	0.019
Africa	0.063	0.038	0.020
LAC	0.055	0.037	0.017
EU	0.024	0.017	0.008
Japan	0.020	0.007	0.008
US	0.022	0.006	0.002

Source: Díaz-Bonilla et al., 2002

Table 7. Coefficient of Variability for Price: constant value

	1960-1999	1990s	1995-1999
Cocoa (cents/kg)	0.54	0.14	0.13
Coffee Mild (cents/kg)	0.40	0.29	0.21
Coffee Robusta (cents/kg)	0.55	0.26	0.14
Tea (cents/kg)	0.20	0.19	0.21
Sugar (cents/kg)	0.81	0.16	0.17
Orange (\$/mt)	0.11	0.08	0.01
Banana (\$/mt)	0.11	0.12	0.11
Beef (cents/kg)	0.21	0.13	0.06
Wheat (\$/mt)	0.22	0.14	0.16
Rice (\$/mt)	0.34	0.13	0.07
Maize (\$/mt)	0.21	0.16	0.17
Sorghum (\$/mt)	0.21	0.13	0.15
Coconut Oil (\$/mt)	0.36	0.29	0.15
Soybean Oil (\$/mt)	0.30	0.18	0.13
Groundnut Oil (\$/mt)	0.28	0.15	0.08
Palm Oil (\$/mt)	0.30	0.29	0.19
Soybean (\$/mt)	0.22	0.11	0.12
Soybean Meal (\$/mt)	0.27	0.16	0.21
Cotton (cents/kg)	0.19	0.14	0.12

Source: Díaz-Bonilla et al., 2002

Table 8. Developing countries with worsening indicators for calories and proteins

	Countries with lower indicators in 1990s than in 1960s and than the group average in 1990s	Countries with lower indicators in 1990s than in 1980s and than the group average in 1990s
Level Calories	26 (20%)	37 (28%)
Level Proteins	33 (25%)	42 (32%)
	Countries with higher indicators in 1990s than in 1960s, and than the group average in 1990s	Countries with higher indicators in 1990s than in 1980s, and than the group average in 1990s
Volatility Calories	23 (17%)	16 (12%)
Volatility Proteins	23 (17%)	21 (16%)

Source: Díaz-Bonilla et al., 2002

Note: Based on data for 132 developing countries.

Table 9. Classification of countries in 12 clusters: mean values of the food security variables

	Calories per capita CALCAP (calories)	Proteins per capita PROTCAP (grams)	Food production per capita PRODCAP (US\$)	Export to food import ratio EXPTOIMP ratio	Share of food import to total export 1/EXPTOIMP (percent)	Share of non-agricultural population NAGRPOP ratio
Cluster-1	1,982.9	48.6	81.8	4.9	20.4	0.23
Cluster-2	2,229.2	58.8	117.6	5.3	19.0	0.71
Cluster-3	2,244.6	52.6	120.3	14.1	7.1	0.41
Cluster-4	2,581.5	70.8	157.2	4.8	20.8	0.39
Cluster-5	2,602.3	66.5	210.4	11.3	8.8	0.75
Cluster-6	2,672.9	72.8	124.1	19.8	5.0	0.41
Cluster-7	2,976.1	82.7	135.1	9.1	11.0	0.82
Cluster-8	2,827.7	78.4	233.3	25.6	3.9	0.83
Cluster-9	3,231.3	100.1	254.2	18.6	5.4	0.88
Cluster-10	3,271.8	97.7	304.2	35.9	2.8	0.93
Cluster-11	3,303.7	103.3	520.6	17.7	5.7	0.93
Cluster-12	3,374.1	107.5	923.9	32.7	3.1	0.93

Source: Diaz-Bonilla et al. (2000).

Table 10. Country membership in Cluster 1 to 12

		LDC	NFIDC	Others	
Food Insecure Groups	1. (30)	WTO members	Angola, Bangladesh, Burkina Faso, Burundi, Central African Republic, Chad, Dem Republic of Congo, Gambia, Guinea, Guinea-Bissau, Haiti, Madagascar, Malawi, Mali, Mozambique, Niger, Rwanda, Sierra Leone, United Rep of Tanzania, Uganda	Kenya	
		WTO observers	Cambodia ¹ , Ethiopia, Nepal ¹ , Yemen		
		Others	Afghanistan, Comoros, Eritrea, Liberia, Somalia		
	2. (14)	WTO members	Djibouti, Lesotho	Botswana, Cuba, Dominican Republic, Honduras, Peru	El Salvador, Georgia, Mongolia, Nicaragua
		WTO observers			Armenia, Azerbaijan
		Others			Tajikistan
	3. (17)	WTO members	Solomon Islands, Togo, Zambia	Côte d'Ivoire, Sri Lanka	Bolivia, Cameroon, Republic of Congo, Ghana, Guatemala, India, Namibia, Papua New Guinea, Philippines, Zimbabwe
		WTO observers	Laos ¹		Viet Nam
		Others			
4. (13)	WTO members	Benin, Mauritania, Senegal	Pakistan, Saint Lucia	Albania, Grenada, Saint Kitts and Nevis, Saint Vincent/Grenadines	
	WTO observers	Sudan ¹ , Vanuatu ¹		Seychelles	
	Others	Kiribati			
5. (18)	WTO members		Jamaica, Trinidad and Tobago, Venezuela	Belize, Brazil, Colombia, Costa Rica, Ecuador, Fiji Islands, Guyana, Kyrgyzstan, Nigeria, Paraguay, Suriname, Swaziland	
	WTO observers			Croatia, Macedonia (The Former. Yug. Rep.), Uzbekistan	
	Others				
6. (5)	WTO members	Myanmar		Antigua and Barbuda, Gabon, Indonesia	
	WTO observers			China	
	Others				
7. (14)	WTO members	Maldives	Barbados, Egypt, Mauritius, Morocco, Tunisia	Brunei Darussalam, Dominica, Estonia, Jordan, Kuwait, Macau, Mexico	
	WTO observers	Cape Verde		Algeria, Lebanon, Russian Federation, Saudi Arabia	
	Others			Bahamas, Islamic Rep of Iran, Libyan Arab Jamahiriya, Syrian Arab Republic	
8. (9)	WTO members			Bulgaria, Chile, Republic of Korea, Latvia, Malaysia, Republic of Moldova, Panama, Slovakia, South Africa	
	WTO observers				
	Others				

Table 10. Continued

		LDC	NFIDC	Others	
Food Secure Groups	9. (16)	WTO members		Czech Republic, Germany, Iceland, Israel, Japan, Lithuania, Malta, Poland, Portugal, Romania, Slovenia, Turkey, United Arab Emirates, United Kingdom	
		WTO observers		Belarus, Kazakhstan	
		Others			
	10. (9)	WTO members			Austria, China--Hong Kong SAR, Finland, Hungary, Norway, Sweden, Switzerland, United States of America
		WTO observers			Ukraine
		Others			
	11. (9)	WTO members			Argentina, Belgium-Luxembourg, Canada, France, Greece, Italy, Netherlands, Spain, Uruguay
		WTO observers			
		Others			
	12. (3)	WTO members			Australia, Denmark, Ireland
		WTO observers			
		Others			
Outliers (2)	WTO members			New Zealand, Thailand	

Source: Diaz-Bonilla et al (2000).

Notes: WTO members not included because of data unavailability: Bahrain, Cyprus, Liechtenstein, Qatar and Singapore.

LDC: Least Developing Countries. LDC not included because of data unavailability: Bhutan, Equatorial Guinea, Samoa, Sao Tome Principe, and Tuvalu.

NFIDC: Net Food Importing Developing Countries.

The majority of countries have been classified in the same group by all three clustering methods; the countries in bold have been classified in the same group by two out the three clustering methods.

¹ Countries in the process of accession to the WTO.

Number of countries in a cluster is in parenthesis.

Table 11. The Development Box: principles and instruments

Principles

Specific provisions, which are at best minimally trade distorting and yet are able to provide DC with the required flexibility to adopt the domestic agricultural policies, which will ensure the objectives

Objectives

Applies only to developing countries
Enhances flexibility not prescribes specific policies
Targets low income and resource poor (LI/RP) farmers
Focuses on “food security crops” (staple or main crops of LI/RP farmers, which are usually for domestic production)
Addresses specific problems of NFIDCs

Instruments and measures

Establish a “positive list” to indicate agricultural crops that would be subject to reduction commitments but would exclude staple food security crops.
Keeping with the condition of total domestic support below the *de minimis* level, DC would maintain appropriate levels of tariff bindings as a S&D measure
Allowed to re-negotiate low tariff bindings in relation to food security crops.
Quota and tariff-free access in developed countries to products important to developing countries’ LI/RP farmers
Expand Article 6.2 to include support to LI/RP producers such as subsidized credit and other capacity building measures, input subsidies or other product specific support, infrastructure assistance such as any spending on transportations costs from surplus areas to deficit areas of food security crops
Compute *de minimis* requirement on an aggregate basis
Greater assistance to LI/RP producers under Annex 2, paragraph 13 on regional assistance programs.
Expand the Safeguard measure to all developing countries as part of the AoA.
Dumping should be prohibited.
Penalty measures that are triggered when domestic production in DC, or non-subsidized exports, are displaced by subsidized production in other countries.
Technical and financial assistance to LDCs and NFIDCs to improve agricultural productivity, facilitate agricultural development and avoid the long-term dependency on food imports.
International fund from major agricultural exporters, to help LDCs and NFIDCs obtain their food requirements from international markets.
The Peace clause (Article 13) should not be renewed and DC measures under the Green Box and S&D should be exempt from any action under the Subsidies Agreement.

Table 12. Food Security

Tariffs

Developing countries should be able to maintain appropriate levels of tariff bindings.

Should be able to rationalize their zero or low tariff bindings.

A priori reduction in the trade distorting domestic support and export subsidies by developed countries

Market Access

Quota and tariff free markets access from developed countries specially for exports produced by LI/RP farmers.

Elimination of tariff peaks and tariff escalation by developed countries.

Elimination of non-tariffs barriers by developed countries (Sanitary and Phytosanitary measures).

Domestic Support

All domestic support measures taken by developing countries for food security, rural development, and poverty alleviation should be exempted.

Expand Article 6.2 to LI/RP producers, staple foods for domestic consumption, and spending on transportation.

Additional flexibility over and above the *de minimis* level

Export Subsidies

Export subsidies by developed countries should be eliminated.

Export subsidies by developing countries should be allowed when critical to food security needs

Marrakesh Decision (LDCs and NFIDCs)

Assistance at times of high prices/low domestic production

Technical and financial assistance by developed country agricultural exporters to improve agricultural productivity in these groups.

International fund by major agricultural exporters.

Food Aid and Food Security Stocks

Wider definition under the Green Box for food stocks policies

The AoA should provide for joint maintenance of regional emergency stocks and encourage financial support from developed countries.

Food aid as a means of disposing of price-depressing surpluses from developed countries should be should not be exploited. It should be demand/request driven and targeted at the needs of the recipient country.

Other Provisions

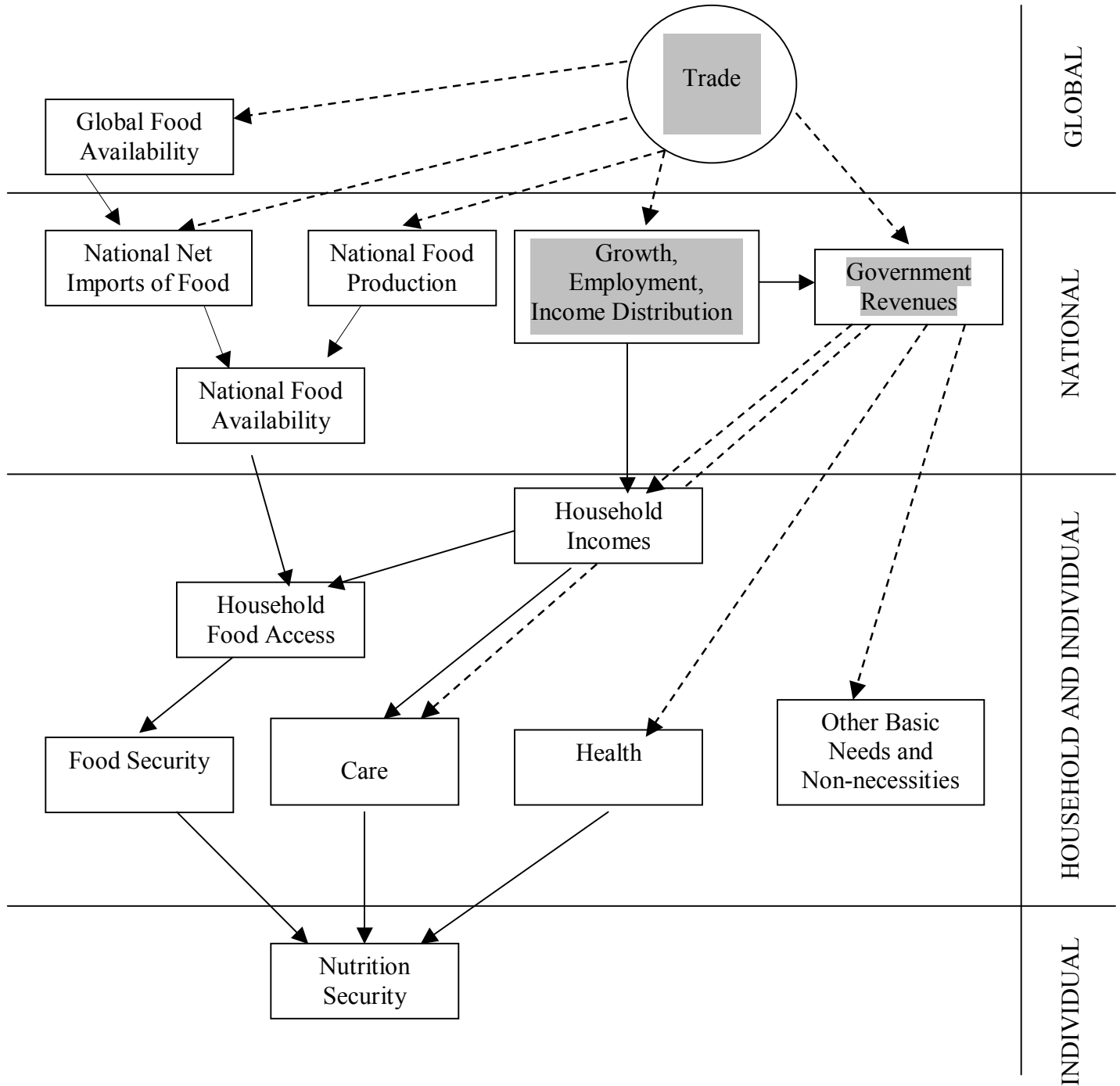
Agricultural safeguard to protect small and marginal farmers against cheap import surges.

Prohibit dumping and developing countries should be able to retaliate with border measures.

Penalty against subsidized production which displaces domestic production

Automatic extension of the peace clause in measures relating to food security concerns.

Figure 1--Conceptual framework for food security



(Source: Adapted from Smith (1998).)

Figure 2. Ratio of food imports to food production in real terms

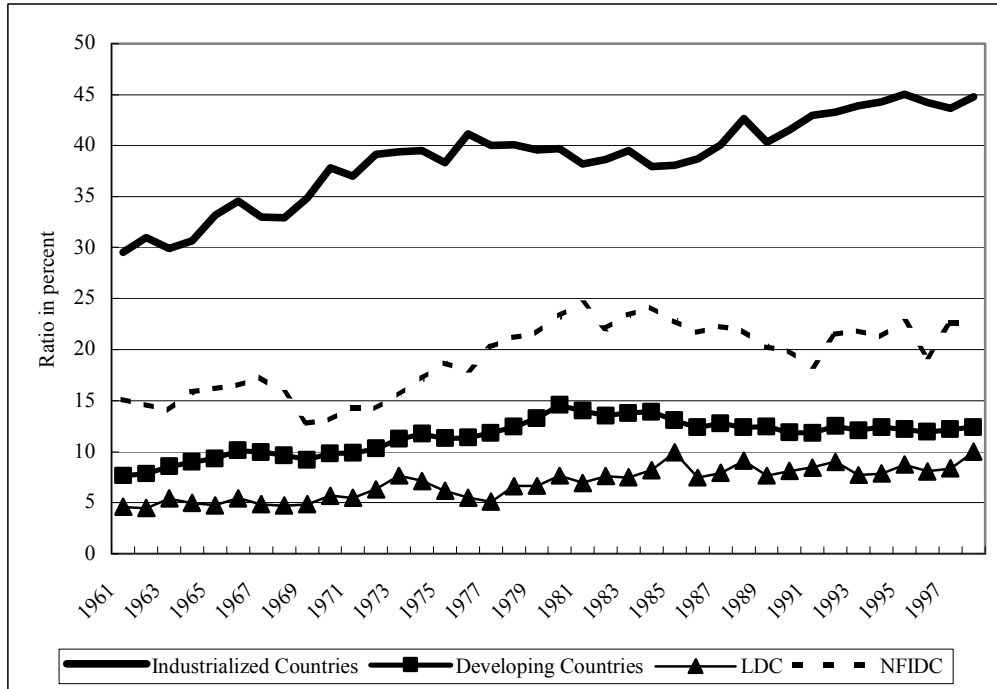


Figure 3. Ratio of food imports over total exports

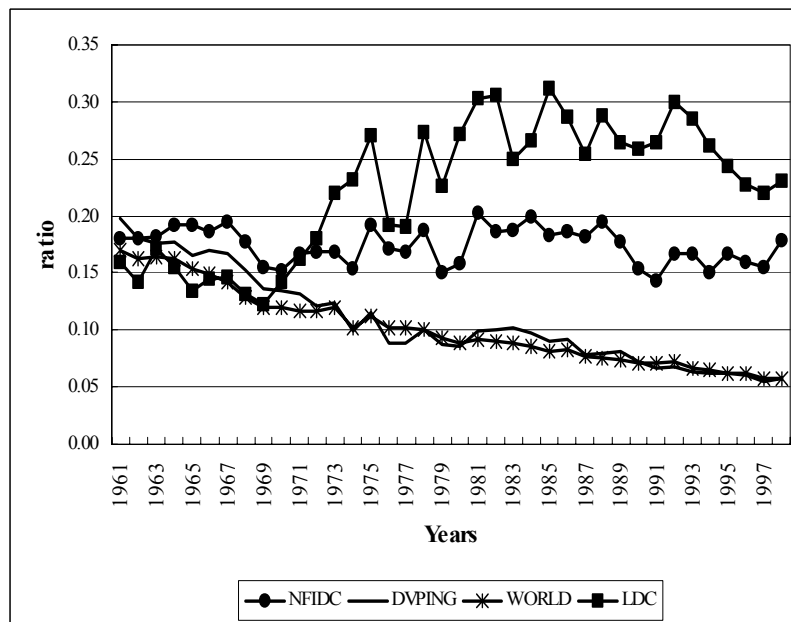
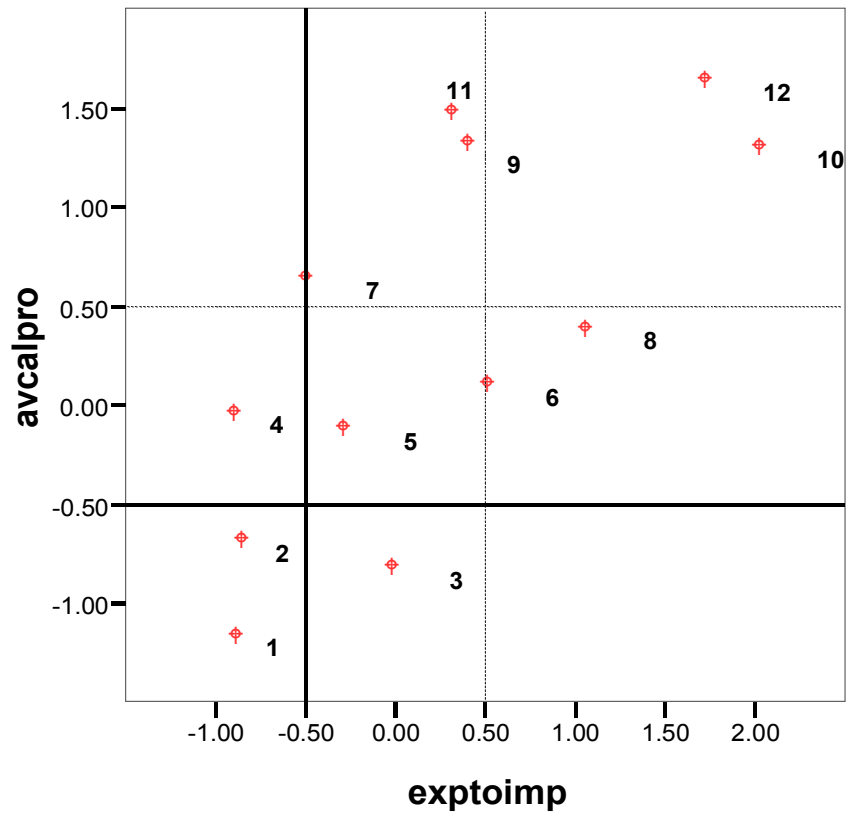


Figure 4. Scatter plot of consumption per capita (average of calories and proteins indicators) versus trade indicator.



LIST OF DISCUSSION PAPERS

- No. 40 - "Parameter Estimation for a Computable General Equilibrium Model: A Maximum Entropy Approach" by Channing Arndt, Sherman Robinson and Finn Tarp (February 1999)
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