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Agriculture versus trade liberalisation: Latin America's productive structure and adaptation possibilities¹

Salomón Salcedo FAO,
Mônica Rodrigues CEPALC,
Martine Dirven CEPALC

Résumé : Les agricultures latino-américaines sont hétérogènes, en termes de potentiels de production et de structures agraires. Si la libéralisation commerciale agricole n'est pas en Amérique latine une nouveauté totale, les fortes protections sur les produits sensibles incitent à aborder son approfondissement en gérant au mieux les menaces économiques et sociales sur l'agriculture familiale traditionnelle tout en promouvant les adaptations nécessaires pour bénéficier des nouvelles opportunités d'exportations.

Mots clefs : Amérique latine, libéralisation commerciale, agriculture, opportunités, menaces

Abstract: *Latin American agricultures are heterogeneous in terms of production potential and agrarian structures. Although the commercial liberalisation of agriculture is not a total novelty in Latin America, strong protection of sensitive products leads to increasing it with the best possible management of economic and social threats to traditional family farming while promoting the adaptation required to benefit from new export opportunities.*

Keywords: *Latin America, trade liberalisation, agriculture, opportunities, threats*

Introduction

Latin America is a very heterogeneous continent. This heterogeneity is evident within the countries, in socio-economic and cultural terms as well as with respect to production potential and agricultural structure. Patterns are however repetitive and this allows to describe them. They also have been fairly stable through time, therefore, older data still represent most of the situation today.

Trade liberalization in the region is not new: there have been important improvements as to tariff reductions as part of neo-liberal reforms of the mid-eighties, advances of the Uruguay Round, free-trade agreements (FTA) and unilateral preferences prevailing in the main world markets. Nonetheless, trade barriers persist for the so-called sensitive products, many of them very important for Latin American agriculture. Meanwhile, new obstacles to trade have arisen, such as technical and sanitary barriers, intellectual property rights and quality standards (public and private). To include all the mentioned variables in the evaluation of the impact of trade liberalization on agriculture is a major challenge.

In addition, the agricultural sector is extremely complex and heterogeneous, suffers continuous climate and biological shocks, and is very sensitive to some macroeconomic variables, in particular the exchange rate. Moreover, the information on the adaptation strategies followed by farm households and their individual members is still insufficient. Present models are not able to consider all these elements, nor to satisfactorily weight them in order to isolate those effects from the trade liberalization ones. Therefore, especially ex-post evaluations, require a dose of "intellectual heroism" that we have chosen to leave aside in this paper.

Finally, a powerful lesson derives from the analysis: it is essential to have a strong internal policy agenda aimed at: strengthening competitiveness -especially of the most traditional groups-, improving infrastructure and adapting the necessary institutions.

I – Survey of Latin America’s productive structure

Latin America comprises twenty countries². Agriculture, as a primary sector³ represents 6.6% of regional GDP (at constant prices of the year 2000) but in Guatemala, Haiti and Paraguay it represents over 20%, while in Argentina, Venezuela and Mexico less than 5%. During the 1990-2003 period, the participation of agricultural value added in total GDP increased in eight countries (especially the Southern Cone countries with the exception of Chile) and decreased in 12 (all the Central American and Caribbean countries, Colombia and Bolivia).

In terms of trade, primary agriculture⁴ represents 10% of the total region’s exports, varying from 63% in Paraguay to 1% in Venezuela, and 5% of total imports, varying from 12% in Cuba to 2% in Paraguay. When including processed agro-food products⁵, on average, exports represent 17% of total exports and imports 8% of total imports.

Primary agriculture⁶ employs 18% of the region’s economically active population (EAP), ranging from 60% in Haiti to 7% in Venezuela. The agricultural to total EAP ratio is decreasing and, since the late eighties, the agricultural EAP also decreases in absolute numbers (0.2% annually between 1990 and 2000), and it is expected to continue to decrease at a rate of 0.6% per year between 2000 and 2010. However, nine out of the 20 countries showed increases in agricultural EAP and five countries showed a change in tendency: an increase between 1990 and 2000 and a reduction from 2000 onward.

Agro-industry, in turn, employs approximately another 5% of total EAP. In other words, in total, agriculture and agro-industry together employ directly, without considering services such as transportation, trade and others, nearly a fourth of the employed in the region.

Based on the census micro-data of few countries⁷, it can be concluded that around 80% of farms are in the hands of self-employed farmers and that 50% of the latter live essentially from agriculture, while the rest obtains an important part of their income from other sources (from work, or public and private transfers).

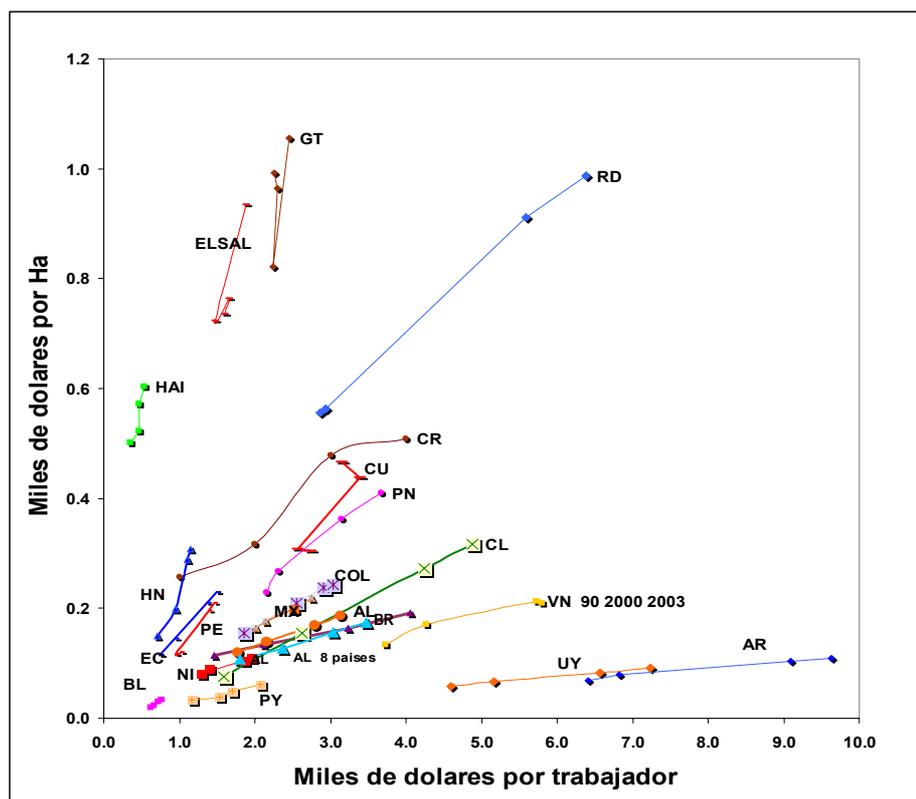
The average size of farms -around 65 hectares- remained almost unchanged in Latin America over the last decades (compared with 1.6 in Asia, 1.6 in Africa, 121 in North America and 27 in Europe). (Nagayets, 2005 based on von Braun, 2005). Nonetheless, again there are large differences among countries (See Table 1 in Annex). The relative endowments of land and labour have strongly influenced development paths (Hayami and Ruttan, 1985) with the consequent differences in average productivity. (See graph 1)

Since the eighties, the area planted with soybeans has almost tripled, representing near to a third of total cultivated area. Fruits are the only other product that expanded, while the area with cotton was the one that most contracted. In terms of value added, poultry increased (from 4% to 11% of total value added) similar to soybeans, while beef meat showed an important loss in participation (from 21% to 18%).

The differences in yield between own-account and commercial agriculture are large and increasing. This situation seems to repeat itself in all countries and for all products, including the labour intensive ones that were considered more appropriate for family farming (i.e. vegetables and fruits, vineyards, small livestock and dairy)

Although, there have been clear progresses in schooling, rural population still lags several years behind urban population. Considering both the urban and rural population, those that work in agriculture have the lowest levels of schooling. If nine years of formal education were to be considered a minimum to satisfy the requirements of modern agriculture, then Chile is the only country where more than 50% of rural youngsters between the ages of 15 and 24 meet the required level. However, agricultural decision makers average 50 years of age and have four years or less of formal education, which should be considered insufficient on all counts.

Graph 1: Latin America (1980-2003): Technological paths of agricultural development



Source: Agricultural Development Unit, ECLAC, on the basis of Nacional Account Data of ECLAC's Division of Statistics and employment and cultivated area of FAOSTAT.

Traduction de la légende : milliers de dollars par ha/milliers de dollars par travailleurs. US dollars constants année 2000.

In terms of infrastructure, Fay and Morrison (2005) point to large differences in coverage and quality in the region, and the existence of many problems in logistics; they indicate that in contrast to developed countries, where transportation and storage costs represents around 10% of product cost, in Latin America these costs vary between 15% (Chile) and 34% (Peru).

In Annex 1, countries are classified according to their agricultural products trade balance in: surplus countries, moderate surplus and deficit countries. The table presents several trade indicators, agricultural structure and employment indicators, as well as liberalization efforts (FTAs signed) and membership in groups (G-20, G-33, ATP, etc.) with different approaches toward the WTO and other negotiations.

Although there are some common characteristics among countries in line with their trade balance, it should be noted that the positive or negative agricultural balance of trade does not necessarily relate to the negotiating position in the multilateral environment. Hence, for instance, Mexico and Venezuela belong to the Group of 20, although they have since long a deficit in their agricultural trade. Among the common characteristics, the strong surplus countries seem to have a more specialized agriculture and are very competitive at the global level in the production of cereals, oil crops and meat (excepting Ecuador, Chile and Costa Rica). On the other hand, the productive structure of deficit countries tends to be less

specialized. Moreover, strong surplus countries tend to have more land per person employed in agriculture (except Costa Rica).

II – Main profiles of current free trade agreements (FTAs) and their impacts

The signature of the North American Free Trade Agreement (NAFTA) between the United States, Canada and Mexico, was a turning point for the region in several ways: it started the era of agreements between countries of different levels of development and was a pioneer in the inclusion of several complex subjects (investments, intellectual property, competition policies) in the negotiating process, going beyond the traditional discussion of market access.

Nonetheless, more than a decade after NAFTA's signature, the analysis of its impacts still generates controversy. Apart from the difficulties in isolating the treaty's consequences from the ones derived from policies and other variables (economic, climatic, etc.) there are several consequences that were not expected in the ex-ante evaluations.

The comparison of ex-ante and ex-post analysis of NAFTA shows the difficulties to infer FTA results prematurely, in particular when they include non-commercial areas in the negotiations that may, in terms of normative agreements, outweigh the obtained tariff reductions. At the same time, many policies, not included in the FTA, continue influencing in a parallel and sometimes unexpected ways the affected economic groups, increasing or neutralizing the treaty's impacts.

In general, it can be concluded from several evaluations of TLCAN and other treaties (Salcedo, 1999; PNUD et al., 2005; Durán et al., 2006) that the thesis that trade liberalization brings automatic benefits for the partner countries cannot be sustained. The concerns of governments and civil society alike on the cost-benefit balance of free trade are even more justified when considering the great number of agreements signed or in negotiation in the most varied instances: multilaterally, in the WTO area, bilaterally or plurilaterally, with regional or extra-regional partners. For the countries that participate actively in all these arenas, evaluating the final impact of the different liberalization commitments is a major challenge.

The impact evaluations for the agricultural sector in particular, are more complex, due to the highly sensitive nature of the sector's products in the trade negotiations (reflected in more markets access restrictions⁸) and the internal conditions of the sector in the partner countries. In relation to the latter, the heterogeneity of the agricultural productive structure in Latin America produces a wide variety of post-liberalization feasible scenarios, with the consequent difficulties to design and implement compensatory or transitional policies to free trade.

Thus, the challenges of FTAs for Latin American countries and, in general for many developing countries, come from at least three different fronts: the treaties itself (including the political economy of the negotiation process, the scope, and the implementation of final commitments), the structure and weaknesses of its institutions and of the involved agents.

a) Trade negotiations

The analysis of the conditions obtained by Latin American countries in the several FTAs, especially with developed partners, reveals a series of challenges for the region's agricultural sector. These can be summarized in four broad subject areas: the sector's sensitivity, asymmetries among partners, non tariff commitments and support policies.

Sensitivity of the agricultural sector.- As mentioned before, in many of the agreements signed by the countries of the region, agricultural products (and their processed derivatives) face particularly strict liberalization conditions, such as longer tariff reduction periods, special exceptions and safeguards. In many cases, this is due to the internal support policies for

specific crops in developed countries. It is also the response to political pressures of powerful lobbies, or to economic, social and environmental fragility of certain chains/regions.

Obviously, the level of protection given to the sector in the FTAs is directly proportional to the partner's competitiveness in the so-called sensitive products. For instance, in the agreements with the United States, liberalization conditions for beef meat are stricter for Nicaragua, due to its weight as exporter to that market, than for Chile. The agricultural clauses in the agreement between the United States and Australia, a major agri-food exporter, show the difficulties that a possible negotiation between Brazil and Argentina with the US could face⁹.

On the other hand, although Latin America is a net exporter of agricultural products (primary and processed), several countries show deficits (see again Annex 1). Even in countries with a high agricultural trade surplus, as the Southern Cone countries, one can identify some sub-sectors sensitive to an increase in imports, either because of productivity problems or because of the existing market distortions.

Given the sensitivity of their agricultural sector, the countries of the region have been able to approve exclusion clauses¹⁰ or trade protection mechanisms in the different FTAs signed intra- and extra-regionally.

Although the mechanisms used in the FTAs for the protection of sensitive agricultural products are legitimate options, they have not always been used in the most efficient way by the countries of the region. On the one hand, the selection of products to be benefited by those mechanisms should be guided by impact studies, but these are not always viable because of lack of resources and adequate information and the speed of the negotiations. In many cases, the selection ends up being more political than technical, also due to the clause of confidentiality of many FTAs, which prevents civil society to know the details that are being negotiated until after the signature. The defence of the interests of the most sensitive segments (generally less well politically represented) is thus compromised.

On the other hand, once the agreement comes into place, the application and efficacy of trade protection measures are not always assured either. For instance, a study on CAFTA (ECLAC, 2004) showed that the effect of the weight of United States, as origin of imports, on preferential quotas and safeguards measures for sensitive products (mainly rice and corn), was not considered. By the nature of the safeguard detonator, for some products, there is too much room for the increase of imports from the US before the trade protection mechanism can be implemented. On top of this, in some cases, there is an inefficient administration of tariff quotas (i.e. the import without tariff of a higher volume than the quota granted).

Asymmetry among partners.- The important asymmetries in sizes and development levels between partners stand out in the agreements signed by the region with the US, Canada and the European Union. So much so, that in the last decades the Latin American countries in general and some in particular (Andean, Central American and Caribbean countries) have benefited from the tariff preference schemes implemented unilaterally by developed countries (for instance, through the Andean Trade Preference Act or the Caribbean Basin Initiative).

Under these schemes, most agricultural products coming from the region (except those of the MERCOSUR countries) already entered the United States and European Union markets without tariffs, even before the signature of any treaty. In fact, the importance of the unilateral preference systems for the Central American and Andean countries, and the threat of their imminent abolition, was one of the incentives to negotiate an agreement with the U.S.A. (although in exchange of concessions on their markets).

In spite of the unquestionable asymmetries with the U.S.A., these FTAs do not consider any differential treatment (for the implementation of technology transfer programmes, for instance). In the case of technical norms and sanitary and phyto-sanitary measures that particularly affect agricultural trade (and contrary to some regional agreements such as between the European Union and the Andean Community), the FTAs signed between Latin American countries and the

United States do not either foresee the creation of internal conflict resolution instances (NAFTA is the exception). Given their growing importance as trade obstacles, the internalization of technical discussions could benefit the less developed partners' institutions in charge of these subjects through a learning, training and technology transfer process.

An improved institutional development in these and other areas could lead the regional economies to a better utilization of the opportunities created by the FTAs. Meanwhile, because of the very general tasks defined for the committees and technical groups established in the treaties, it is not clear whether the joint work in said forums will effectively contribute to the institutional development of the less advanced parties.

Non-tariff commitments of the treaties.- The recently signed treaties by Latin American countries include some non tariff topics essential for the development of the region's agriculture. Certain non-tariff barriers (technical norms, sanitary and phytosanitary measures – SPS) have traditionally had an important effect on the international market access possibilities of agricultural products.

Such barriers have become more relevant as a protection mechanism, as tariffs have been reduced or eliminated as a consequence of trade agreements. Moreover, the growing sophistication of demand, the requirements of the private agents operating along the agricultural chain and the recent appearance of agricultural diseases and plagues easily transmittable from one country to another are factors that press even more for the institutionalization of such measures.

According to Kjollerström (2004), the current trade agreements or those being negotiated by countries of the region generally reiterate commitments on technical norms and SPS measures acquired in the frame of the WTO's Agreement on Technical Obstacles to Trade. Exceptions are listed below.

Some FTAs explicitly mention the obligation to grant national treatment to agricultural goods traded between the partners, creating in this case a committee or working group about technical and trading norms (NAFTA, Costa Rica-Mexico, G3, Mexico-Nicaragua and Chile-United States). The Chile-United States agreement is however the only one that includes provisions of mutual recognition, although limited to beef meat quality classification systems.

In particular, to enter the US market, some agricultural products (mainly fruits, vegetables and dairy products) face trade quality norms (requirements of quality, calibre, volume, packing, etc.) defined annually by the so-called Marketing Orders¹¹ (MO). In the FTAs signed by the United States, the marketing orders, as well as antidumping measures and other domestic production protection mechanisms were not negotiated. Salcedo (1999) points out that during the NAFTA negotiations, it was not possible to eliminate the marketing orders and that only one Mexican representative was allowed to attend the Committees which established said norms (formed by producers, handlers and citizens). The above shows the need to count with efficient trade controversy solution systems in these agreements, in view of the impossibility to negotiate the trade defence mechanisms directly.

In the case of the SPS measures, some agreements (NAFTA, Chile-European Union and Mexico with Costa Rica, Bolivia and Nicaragua) clarify the judiciary aspects (for instance as to how and when each partner must provide information on newly adopted domestic measures) and emphasize the commitment of mutual recognition and cooperation among the parties (creation of a joint committee or working group).

Among the new non-tariff commitments adopted by the countries of the region, intellectual property protection and the geographical indication clauses included in the agreements with the United States stand out. It is expected that such commitments will impact agricultural production both on the input side (agrochemicals, seeds) and on the final goods side, primary and processed.

The intellectual property protection was intensified in the frame of the FTAs, but their impact on the agricultural sector is not clear yet. On the one hand, in the case of agrochemicals, there is an extension of the time-frame of patent enforcement, the elimination of exclusions and restrictions to patenting and the establishment of safeguards to trial data (reported by the inventor when applying for a patent). On the other hand, signatory countries increased their commitments with regard to the regulation of the patenting of new botanical varieties, through the internal discussions and legislation, and through the obligation to adhere to the last version of the International Convention on Protection of New Plant Varieties (UPOV).

An additional aspect that deserves attention in the FTAs signed by Latin American countries is the absence of a normative discussion on the protection of biodiversity and of the knowledge of traditional farmers, both subjects of great interest for the region and presently at the centre of the multilateral discussions.

The Agreement on Intellectual Property Rights related to Trade (TRIPS) provides a basic protection for geographic indications – i.e. the protection of traditional products or handicrafts which have special characteristics (quality, processing, reputation or other) attributed to their geographic origin -, with some special conditions in the case of wines and spirits¹². Some FTAs improved upon the multilateral normative by including the possibility that any sign or combination of signs can opt to protection or recognition as geographic indication. These advances are relevant for the competitive strategies of the agri-food sector, in a context in which brands and product differentiation are each time more important.

Support policies to the agricultural sector.- Production subsidies and other policies to support the sector are not included in the discussions of bilateral and plurilateral agreements. It is in the multilateral sphere –with its strong controversies- that they are being discussed. To the contrary, in most FTAs involving Latin American countries (NAFTA, Chile-United States, Mexico-Uruguay, CAFTA, among others) the signing parties are committed to reciprocally eliminate export subsidies (except for excluded products and export credits) but with the possibility to reintroduce them if one of the parties imports subsidized products from a non-signatory country.

Although internal support policies are not a subject of discussion in the FTAs, they clearly have an impact on access conditions and protection mechanisms for the sensitive products approved in the agreements. The support policies for the agricultural sector include general support programmes and others which are crop specific. In general, products that have a high level of internal support are the most sensitive to liberalization. However, for some of them a progressive dismantling of certain internal support policies has been approved as a result of an FTA. For instance, in the agreements signed with the United States, the Latin American countries promised to eliminate the price bands for sensitive products, during a 12 years process in the case of Chile and immediately in the case of Colombia, Peru and the Central American countries that subscribed the CAFTA

b) The expected impacts of FTA

In the previous section it was argued that, because of the diversity of foreign scenarios and the complexity of agricultural negotiations, it is difficult to predict the results of trade agreements on the Latin American agricultural sector. The present section will try to demonstrate that. On top of the difficulties of the negotiating process, factors such as the share of the products affected by liberalization in the regional production, the relatively low competitive potential and heterogeneity of the farmers, etc., should be considered.

In a study measuring the impact of the FTA between the Andean countries and the United States on the Andean countries, Durán et al. (2006) found evidence that both heavy manufactures and agriculture suffer most in terms of production. In all the analyzed scenarios (full liberalization, liberalization with exclusion of sensitive products and elimination of unilateral preferences without FTA), agricultural production would fall in the Andean sub-region. Such

setback would be larger in the full liberalization scenario, due to a large increase in wheat and meat imports from the American partner.

Focusing on the agricultural sector, ECLAC carried out a series of studies¹³ using both trade and production data (mainly from agricultural censuses) to identify the main opportunities and threats of FTAs, as well as the strengths and weaknesses of regional farmers.

In these studies, the main liberalization scenarios for Latin America with the United States, Canada, and the European Union were considered, as well as the integration among countries of the region. Some of the studies¹⁴ used measures of physical and monetary productivity to estimate the advantages of MERCOSUR, Central America and the Caribbean countries in a hypothetical FTA with the European Union. The other studies also analyze census data and conclude about the potential competitiveness of the different kinds of farmers.

In the different liberalization scenarios some sub-sectors seem especially sensitive for Latin America: cereals, oil crops/oils and meats. At the same time, the opportunities tend to be concentrated in fruits and vegetables, sugar and derivatives and soft drinks. The most important potential markets are the developed partners (mainly the United States and the European Union), while the most competitive potential exporters are mostly already large regional exporters of agricultural products.

Another conclusion is the great importance of the analyzed liberalization scenarios for the Latin American economies. In fact, the products identified as opportunities or threats have an important weight in trade and a large incidence on the farms of these countries, since more than 80% of the farms produce some product identified as an opportunity or threat (Table 1)¹⁵.

Table 1
Potential impact of trade liberalization on agricultural productive structure ^a

	Brazil	Chile	Nicaragua	Peru
Number of farms potentially affected by liberalization	4,263,820	275,017	178,796	1,538,865
Total number of farms	4,859,864	329,705	206,631	1,764,667
Area of crops potentially affected by liberalization (ha)	38,280,395	1,183,567	909,629	1,459,868
Total cultivated area (ha)	42,416,440	1,464,290	1,380,331	3,277,855
Number of animals potentially affected by liberalization ^b	100,329,613	-	1,499,237	4,250,370
Total number of animals ^b	102,621,873	-	1,503,721	5,597,367
Affected farms /Total farms (%)	87.7	83.4	86.5	87.2
Area of affected crops/Total cultivated area (%)	90.2	80.8	65.9	44.5
Number of affected animals /Total number of animals (%)	97.8	-	99.7	75.9

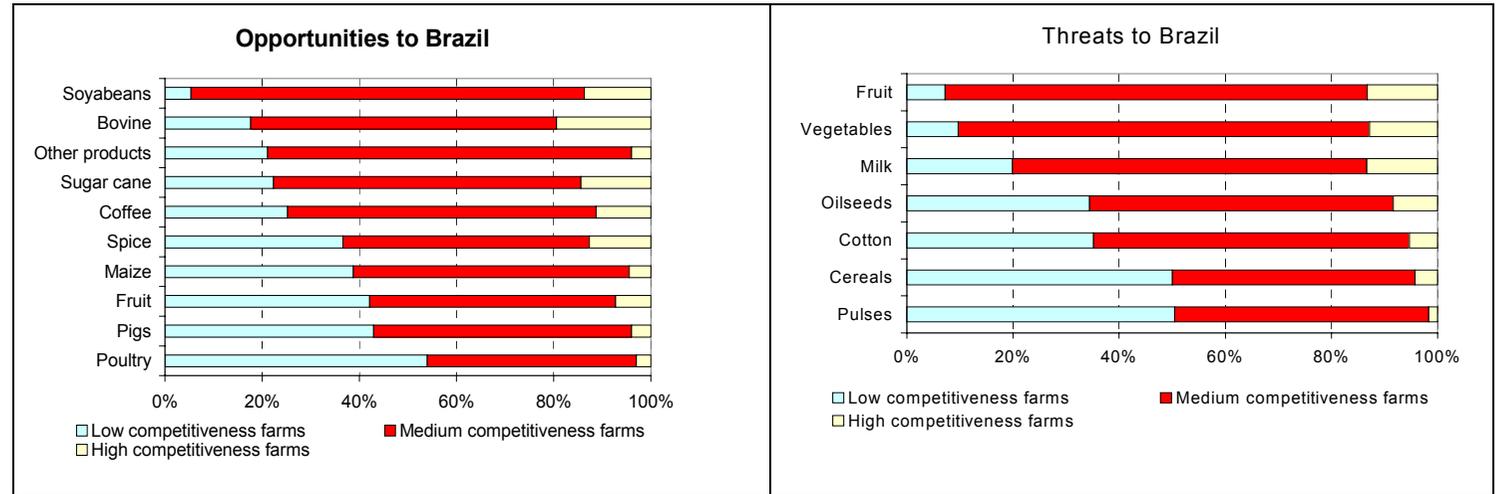
Source: Rodrigues (2006a) based on the agricultural census data of Brazil (1996), Chile (1997), Nicaragua (2000) and Peru (1994).

a The adopted methodology identifies potential threats and opportunities of the main trade liberalization scenarios for Latin America, and then identifies the farms producing the crops and cultivated area or the animals.

b In beef-equivalent.

The profile of the affected farms and their geographic location highlight the deficiencies and potentials of the sector with respect to the current trade liberalization processes. In general, the affected farms are not very different from the average farm (see graphs 2 and 3 with reference to Brazil). Hence, the need to tackle the identified weaknesses of the sector is independent from the liberalization processes, although the negative impacts of the weaknesses can be exacerbated by the FTAs. It should however be stressed that the profile of the majority of agents currently exporting is quite different from the average, especially in terms of capitalization (land, machinery, education).

Graphs 2 and 3: Brazil: Opportunities and threats of liberalization, by kind of product



Source : Rodrigues (2006a) based upon Comtrade and the agricultural census of Brazil (1995)

The main weaknesses as to the competitiveness of farmers -little access to credit and technical assistance, wide use of family labour, high dependence on the agricultural activity, low educational levels and, in some cases, little access to markets for their produce- suggests some priority areas for development. In some specific value-chains or regions these weaknesses are particularly prevalent indicating areas where public policies should concentrate. For example, in the case of Nicaragua, a high and inverse correlation exists between the distance from cities with 10.000 or more inhabitants and the competitive potential of municipalities. Also in Ecuador, the most vulnerable farms are the subsistence ones, located in the Sierra (Andean mountain range), with an average gross production value almost 230 times lower than the leading farms in the coastal area. (UNDP et al., 2005).

One of the limitations of these studies however is their static nature, identifying opportunities and threats of liberalization through revealed competitiveness indicators without considering the possible creation of new competitive advantages.

At present however, the benefits of liberalization reach only a limited group of farmers with high competitive potential, while the rest depends upon the implementation of important structural reforms for them to compete in better conditions.

For these and other reasons, the implementation of support policies or compensatory measures for the farmers affected by liberalization are essential, either to take the necessary steps to compete in the international markets and to continue competing locally or to look for an alternative economic activity, within or outside agriculture¹⁶. Such policies require detailed information on farmers in terms of their socio-economic profile, location and productive strengths and weaknesses. Additionally, this kind of information could be used in the negotiation process of the treaties, to justify a special treatment to certain groups of farmers particularly sensitive to liberalization.

III – Determinant factors of the agricultural productive structure

Trade liberalization is, no doubt, one of the factors determining the agricultural productive structure of the Latin American and Caribbean countries. However, the internal market continues to absorb 85% of production, therefore, trade liberalization is not the only determinant factor, and possibly not even the most important. Other factors such as the international context, the structural characteristics of each country, the particularities of each productive sub-sector, as well as macroeconomic and sectoral policies implemented by each country are also key elements. In fact, all these factors set the path of the impact of trade liberalization. In what follows, there is a succinct analysis of some of these factors.

a) International context

Agricultural international prices.- With the exception of subsistence farmers¹⁷ whose agricultural production is not very sensitive to market price signals, the region's farmers respond to price incentives at the time of deciding what to produce.

According to recent OECD-FAO (2006) projections, the tendency of international agricultural prices, in nominal terms for the next 10 years, will vary according to the product. One factor that could change the international price behaviour (increasing them all) would be an agreement at the WTO for more agricultural trade liberalization (both regarding market access and elimination of internal subsidies). However, in the medium term, given the lack of progress of the Doha Round, there is a low probability of a change in prices as a consequence of WTO agreements.

In turn, changes in supply and demand in large and fast-growing countries like China and India, where the governments play a key role in agricultural markets, will affect the level of international prices, as well as the evolution of the traditional energy and bio-energy markets.

In any case, even considering the different factors mentioned above, in general, a decrease of internal prices is expected in Latin America, mainly for grains, oil crops, meats and dairy products.

b) Internal policies

Macroeconomic Policy.- It determines the general environment in which all economic activity develops. In the particular case of the agricultural sector, the exchange rate is especially relevant.¹⁸

Because agricultural products are homogeneous (commodities) and perishable, the exchange rate has a higher impact on agricultural trade than on industrial products trade. In addition, the ups and downs of international prices cause inefficiencies in the allocation of resources in the agricultural sector, resulting in higher costs or social losses than in the industrial sector (Cho et al., 2003). In turn, Larson, Bittencourt and Thompson (2004), found that the volatility of the Brazilian Real and the Argentinean Peso negatively affected intra-subregional agricultural trade.

In recent years, the currencies of several countries of the region (Brazil, Colombia, Uruguay, Jamaica, Guatemala, Chile and Mexico) appreciated, decreasing the agricultural sector's competitiveness. Over a longer period, Ecuador, El Salvador and Venezuela also registered an overvaluation of their currencies. One of the factors causing such appreciation were the remittances, valued at over 10% of GDP in some countries (Machinea, 2005). If the tendency to appreciate of currencies continues, influenced mainly by remittances, capital influx, and the increase in oil prices and some minerals, the gap between the nominal exchange rate and the long term equilibrium exchange rate will increase even more, hence negatively affecting agricultural competitiveness of the region's countries and, consequently, affecting the productive structure.

Sectoral policies.- One of the leading factors in determining the agricultural productive structure are the sectoral policies (or the lack of them)¹⁹. Both the changes observed in productive structure in the last years and the expected changes from increased trade liberalization have been and will be strongly influenced by the particular design of the political instruments and by their effectiveness²⁰. The policy instruments adopted by the region's countries vary from very limited scope and minimum resources programmes, to large and complex productive incentives and income support programmes. Several of these programmes have not achieved the desired impacts because of problems of: design, perverse incentives, focalization, lack of investment/expenditure priorities, little clarity and control of support processes, and nonexistent monitoring and evaluation.

Tweeten, Gray and Salcedo (2002) point out that NAFTA could accelerate the trends that already were being observed as to the agricultural productive structure in the three countries; they also emphasize the relevance of climate, agro-ecologic conditions and water availability on the productive structure and the importance of several policies on the expected changes, in general, and for some sub-sectors and kind of farmers in particular.

In Mexico for instance, some policies have countervailed the impacts expected by several analyst of the implementation of NAFTA. For example, grain production, especially corn, was expected to plummet because of higher imports of US corn. The support programmes for commercialization in surplus states (Programa de Apoyos a la Comercialización), direct payments (PROCAMPO), and productive incentives (Alianza para el Campo) have contributed not only to avoid the drop in production, but to increase the areas cultivated with corn. Corn continues to be the principal agricultural product of the country (Williams and Hernández, 2006). It is important to point out however that within this subsector (and in general in the grain, meats and dairy subsectors) there have been substantial changes: reduction in the number of farmers and increase in the size of farms.

Considering the relevance of public policy on agricultural productive structure, the question is: what kind of policies and expenditures are currently in place in the region? As mentioned, the public expenditures in support of the sector decreased during the 1985-2001 period. A change from productive and market support towards infrastructure and social expenditures has also taken place. There is however still a strong bias towards private good expenditures, benefiting mainly large farmers (www.rlc.fao.org; Lopez, 2005). In terms of research and technology transfer programmes, as a consequence of demand and co-financing trends, both the national and international institutes have departed from the specific requirements of small-scale agriculture, and this has a major incidence on their future competitiveness (see Wood et al., 2004).

In addition, in order to face the challenge of achieving an adequate balance between a sectoral and national focus, special attention should be given to rural development programmes and their components that could positively influence agricultural competitiveness and that of agri-food value chains.

Terms of FTAs.-Finally, attention should be given to the question of up to which point the FTAs subscribed by the countries limit the scope of internal policy. For instance, in recent FTAs signed between Latin American countries and the US there are clauses that will abolish, in time, important income fluctuation protection instruments for agricultural producers of specific goods, such as price bands. Furthermore, price is not included as a safeguard activation factor for the sensitive products. No doubt, the future productive structure will depend on the past and future terms negotiated in the FTAs, as well as the governments' ability to implement alternative policies to those which are not allowed anymore by the FTAs.

c) Structural characteristics of each country

The capacity to take advantage of the opportunities of free trade, or to deal with the expected increased competence in the internal markets, will depend, mostly on the structural characteristics of each country: economic, political and institutional environment, as basic conditions for productive investment; level of education of the population, income, demographic trends, and tastes and preferences (all factors which will determine the future demand for food)²¹; agro- climatic characteristics and availability of irrigation water.

Other structural characteristics that will affect the impact of trade liberalization are road and other transport, storage and communications infrastructure; land tenure; and transaction costs. The latter refer both to goods and service markets, and play a key role in the way producers relate to markets and respond to policy signals; and can be so high as to represent two thirds of the products' sale value (Salcedo and Bocchetto, 2006)²². Thus, future policies to foster investment in these areas will affect competitiveness and, therefore the agricultural productive structure of the region²³.

d) Characteristic of the productive sector

The future agricultural productive structure of the region's countries will also be determined by the particularities of each productive subsector. For example:

Economies of scale and resource allocation.- In some cases, economies of scale determine competitiveness, while in others they do not. Some subsectors use labour intensively, while others do not. The combination of these characteristics with land allocation and labour in each country, will determine the agricultural structure.

Technological development.- Agricultural technology cannot be automatically transferred from one country to another; in fact not even internally. The agro-ecologic peculiarities of each region demand focalized research, which may take several years. Besides, some technological

developments (as green-house production) question the countries' traditional "comparative advantages" for the production of certain crops, like vegetables²⁴.

Primary sector - downstream linkages.- Contract agriculture with agro-industry and large-scale distribution is a growing phenomenon, with specific characteristics for each subsector. What is less clear is whether they are long-term relationships, how much technical assistance is involved, how risk is distributed along the chain, and how much scope there is for small-scale farmers in these arrangements.

Organization of producers.- Moreover, how many farmers are organized and are able to negotiate better prices for inputs and produce, and how many have access to services like machinery or fumigation at lower costs per unit?

Price transmission.- Depending on the specific market structure of each subsector and country, different international to domestic price transmission elasticities can be observed, affecting the allocation of productive resources.

Transport costs.- The difference between transporting commodities versus processed goods, the distance between production and consumption areas (internal and external), and the differentials in internal versus external transport costs, also play a role in the productive structure (see Kjällerström, 2004).

Possibilities of cluster development based upon agricultural raw materials. - In addition to agglomeration economies, the previous provision of productive and social services (education, health, entertainment), infrastructure and specialized/qualified labour are essential to induce investments in upstream and downstream activities and their services, which in turn may induce synergies and joint activities favouring competitiveness. For now, clusters able to position themselves at the international frontier in productive efficiency and innovation are rare in the region.

Environmental regulations.- A more loose environmental legislation in the countries of the region could favour the establishment of enterprises, especially husbandry, in Latin America at the expense of the activity in developed countries.

FTA administration.- The existence of a large array of FTAs signed by countries of the region, the atomization of productive structure, the deficiencies of some agricultural statistical systems, and weak institutions, among others, hinder FTA administration and occasionally impede the adequate use of safeguards or the response to disloyal competence or technical smuggling.

IV – Actions to take advantage of opportunities and diminish threats

Considering that both the sectoral policies of the region's countries and the international context (distortions of agricultural products markets) will most probably remain almost unchanged, the tendencies observed in the last two decades should continue in the next years: diminishing number of farmers in certain segments, larger enterprises, polarization of the sector (large modern farmers oriented to external market, and small farmers lagging behind). However, governments could take certain actions to maximize opportunities and minimize threats derived from trade liberalization.

a) Knowing the farmer

Be prepared for trade liberalization, to minimize threats and maximize opportunities, requires first of all, knowing the farmer. The huge heterogeneity of the agricultural sector in the countries of the region hinders an acceptable level of knowledge of the different subsectors; the way they

react to different incentives, their specific problems, their competitiveness, and their limitations and potential. Often, the premises that underlie the design and implementation of policy instruments or the negotiation of FTAs are incorrect.²⁵

b) Avoid “one size fits all” policies²⁶

The typology of producers –that can be based on different criteria-, and the productive chain focus, which is fundamental for a clear and full understanding of the agricultural sector, allows representing the heterogeneous agricultural sector, and thus identify the weak linkages in order to design differentiated policy instruments especially for them. In the short run, trade liberalization offers both threats and opportunities for the small-scale farmer, making the need to transit towards differentiating, focalizing, monitoring and evaluating sectoral policies evident (Salcedo, 2005). In the region, there has not only been a lack of policy differentiation, but there has also been a scarcity of instruments towards linkages of the productive chain beyond the primary sector, while in many cases, policy instruments aimed at commercialization, input supply or processing, could have a larger impact on the farmer²⁷.

c) Taking care of pending internal tasks

Fine-tune institutions for FTA administration.- As already mentioned, trade liberalization will require institutional strengthening. The administration of tariff contingencies (foreseen in almost all FTAs) can be very complex and very political. Technical smuggling (understood as the importation of a product under a different tariff line) tends to increase with trade liberalization. Responses to dumping practices require a complex and costly process (plus an anti-dumping legislation, which is not always into place). Moreover, countries should invest in customs improvement, since their efficiency and transparency are key element for a good FTAs administration.

Follow tendencies in quality, traceability and good agricultural practices.- It is a fact that international consumers are increasingly demanding, and that public and private norms and quality standards for food play an ever more relevant role in international agricultural trade. Thus, for instance, traceability²⁸ became compulsory in the European Union as from January 1st of 2005, and the United States Bioterrorism Law of 2002 imposed four traceability norms to any agent wishing to export to the U.S.A.

Likewise, the use of good agricultural practices (GAP)²⁹ becomes inevitable for exporting to developed countries. Farmers who export to Europe must follow the protocols established by EureGAP, and exporters to the United States, those developed by US universities under the sponsorship of the US Department of Agriculture and certified by Davis Fresh Company. More trade liberalization will therefore demand the development of GAP protocols, their implementation and certification by the countries of the region, which will in turn require technical assistance and financial resources. For small-scale farmers to take advantage of the better access to international markets, governments and farmers should create innovative formulas to deal with these issues as well as with complementary ones related to market intelligence and producers - supermarkets chain relationships (Reardon 2005).

To reduce transaction and transport costs.- As already mentioned, the design of instruments aimed at other linkages along the chain than primary production, like improving information flows, strengthening the negotiating capacity of small farmers, encouraging the organization of cooperatives, or improving infrastructure (roads, telecommunications, markets –like covered fresh produce markets-, etc.), may have a large impact on the income and competitiveness of farmers. Governments should also seek the reduction of fixed transaction costs, mainly for small-scale farmers. Moreover, they should find ways to attract investments towards the roads and transport sector, and this requires the development of stronger institutional, regulatory and legal frameworks, transparent contracts and innovative financial formulas. Fay and Morrison (2005) suggest that governments should find efficient ways to spend the infrastructure budget,

for example, by using small-scale local suppliers or cheap technology wherever feasible, finding an appropriate balance between new investments and maintenance of existing infrastructure; and focalizing investment with the aim to improve productivity and competitiveness.

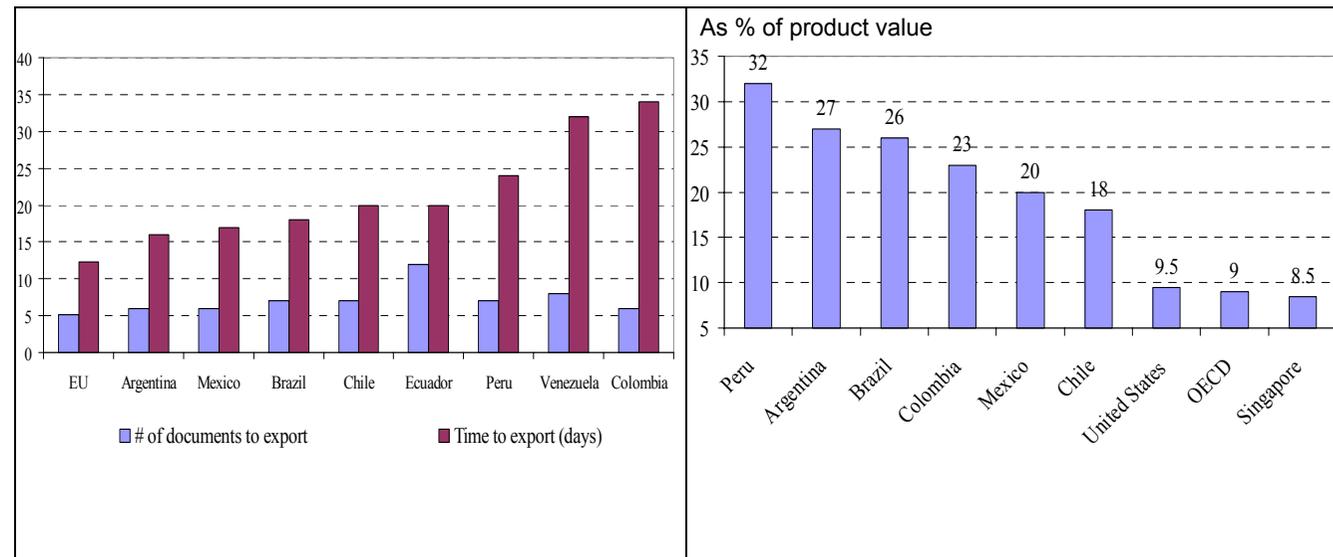
To Invest in safety systems and phyto and zoo-sanitary measures.- With trade liberalization, safety and sanitary policies become key elements, either for consumers and governments population's health concern, or for the real economic catastrophes which trans-frontier diseases can cause in ample agricultural sub-sectors.

Governments should draw strategic plans to enable them, sub-sector by sub-sector, to determine the risks and cost/benefit relation of implementing (or not) certain sanitary measures. This task requires a solid economic and technical expertise -not always available in the countries-, as well as joint working mechanisms between the public and private sectors, tending to the homologation of the different international systems. It is not easy either, to identify the appropriate institutional arrangements for implementing the safety and sanitary policies, especially in view of the decentralization, disarticulation and privatization processes of some of the areas related to sanitary measures followed by some countries.³⁰

Finalize the titling process.- Land titling processes have taken longer than expected. Disputes as to limits and among neighbours, problems with the division of farms, or reticence of rural owners to clear their property rights, delay the process.

Equalizing the playing field of public expenditures.- All the above actions require public money which, unfortunately, showed a strong declining tendency. The regional per capita average is only US\$143 for all public expenditures in productive, social and rural infrastructure programmes. In addition, public expenditures have a bias toward private goods which have essentially benefited larger farmers and have had a lower impact on growth (<http://www.rlc.fao.org/prior/desrural/gasto/presentacion.asp> and López, 2005).

Graphs 4 y 5: Transaction costs



Sources: World Bank, *Doing Business 2006*, and J.L. Guasch and J. Kogan (2005), "Inventories and Logistic Costs in Developing Countries: Levels and Determinants, a Red Flag on Competitiveness and Growth", *Revista de la Competencia y de la Propiedad Intelectual*, Vol. 1, No 1.

d) Be prepared for negotiations

It is essential to be well prepared before initiating formal negotiations (ideally after have accomplished the above tasks). The preparation implies full knowledge of the domestic agricultural sectors (through sector, macro- and micro-level, market, production costs and productivity, price transmission, revealed comparative advantages, etc. studies). It also implies knowledge of the potential partners: what is the basis for their competitiveness and comparative advantages? What are their internal policy instruments, incentives to export, and level of subsidies received by their farmers? What are their sensitive products? What is the current level of market protection, the non-tariff barriers and the effective access to their markets? Furthermore, it is useful to know the kind of negotiations followed by the potential partners in other FTAs and the terms reached, the role played by the respective Congresses and their various Committees, and the political strength of different unions.

Setting up an advisory group to the negotiating team, in which representatives from agricultural unions and sectoral analysts participate (the so called "next door room"), will be useful during the entire negotiation, to determine the priorities as to market access, as well as the tariff reduction schedules for each product, possible safeguards for sensitive products and to achieve FTAs terms according to sub-sector peculiarities. The participation of Congress in the internal discussions and gauging the political aspects of the negotiations is also essential. All the above, may require substantive training for the negotiating teams of the Ministries of Agriculture, Trade or Economy, and also of the private sector, and an information campaign aimed at civil society.

e) Promote exports

Finally, the importance to implement policies to promote exports should be stressed (especially from small-scale farmers), in order to take advantage of FTA opportunities. Indeed, the elimination of tariffs by FTA partners is not enough to increase the agrifood exports of the region. In this sense, it's advisable to "review the experience of organizations as the US Meat Export Federation (<http://www.usmef.org/>) and the US Grains Council (<http://www.grains.org/>), as an example of the synergy between private and public sectors to promote exports. Moreover, the instruments to promote exports will require updating to incorporate relatively new but increasingly important areas such as traceability and good agricultural practices" (Salcedo y Boccheto, 2006).

V – Conclusions

Due to the asymmetries between FTA partners, institutional weaknesses in the countries of the region and insufficiently participative and transparent procedures, what is negotiated does not necessarily respond to the requirements, advantages or weaknesses of the signing country and the bulk of their farmers. Besides, the FTAs signed by the countries of the region are quite restrictive (a.o. in subjects like intellectual property) and do not consider several of the topics relevant at the multilateral fora (such as geographic indications, protection of biodiversity, etc.)

It is also important to stress that substantial unilateral preferences were already granted to the majority of countries -with the exception of the MERCOSUR countries- by the United States and Europe. Therefore the signature of FTAs with these partners have the effect of consolidating these preferences, but also of opening their markets to products –several of them highly subsidized- of the signing partner.

Maybe even more important, is that the asymmetries between the different countries and within each country do not get solved from one day to the other and in the trade liberalization

processes, evidence seems to indicate that timing and speed are essential. In the countries of the region there are very elementary markets and others with severe failures that would prevent an efficient reallocation of resources in the case that a more liberalized trade changed the relative price structure. Therefore, maybe the main recommendation in this essay is not to rush; it is necessary first "to put the house in order" taking care of the different areas identified in section 4, and only then proceed to gradual liberalization processes.

Said processes should be accompanied by the implementation of differentiated policies, tackling the agricultural sector's great heterogeneity, thus allowing an efficient use of scarce public resources.

In any case, the policy instruments should privilege the small farmers' segment, in order for them not to be excluded from the dynamism which, no doubt, will be brought by trade liberalization.

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Annex 1a. Variables for classification of Latin American countries

	X - M primary agricultural products (in million US\$) 2000-2004 a	X / M primary agricultural products 2000-2004 a	X - M primary agricultural + processed products (in million US\$) 2000-2004 a	X / M primary agricultural + processed products 2000-2004 a	Signed FTAs b	Multilateral position c	Average farm sized	Gini index of land d	Own-account farmers/ Agricultural EAP (%)
Large agrifood trade surplus countries									
Argentina	5,452	17.0	13,282	15.6	MERCOSUR	G-20	469.0	0.86	-
Brazil	4,894	3.4	17,438	5.7	MERCOSUR	G-20	72.8	0.85	19.2
Ecuador	1,490	7.7	1,864	4.4	CAN, Chile	TP	-	-	35.5
Chile	2,836	7.7	4,033	3.9	MERCOSUR, Mexico, Central Am., EU, USA, Canada, Korea, EFTA	G-20	83.7	0.91	69.3
Uruguay	297	3.6	814	3.5	MERCOSUR, México	G-20	287.4	0.79	-
Costa Rica	1,052	4.8	1,291	3.3	CACM, Mexico, Chile, Dominican Rep., Panama, CARICOM, USA, Canada	TP	-	-	35.7
Paraguay	429	12.2	506	2.7	MERCOSUR	G-20	77.5	0.93	11.9

Annex 1b. Variables for classification of Latin American countries

Moderate agrifood trade surplus countries									
Bolivia	2	1.0	237	2.0	CAN, MERCOSUR, Mexico	G-20, TP	-	-	11.2
Colombia	1,344	2.6	1,438	1.9	CAN, G3	TP	25.1	0.80	-
Peru	192	1.4	874	1.8	CAN, Bolivia	G-33, TP	20.1	0.87	15.5
Guatemala	608	3.7	540	1.7	CACM, Mexico, Chile, Dominican Rep., Panama, USA	G-20, TP	-	-	27.0
Nicaragua	209	3.7	185	1.6	CACM, Mexico, Chile, R. Dominican Rep., Panama, USA	G-33, TP	31.3	0.72	30.6
Panama	391	4.9	212	1.5	Central America, Taiwan	G-33, TP	11.8	0.52	30.0
Honduras	346	3.0	196	1.3	CACM, Mexico, Chile, Dominican Rep., Panama, USA	G-33, TP	11.2	0.66	32.9
Cuba	-259	0.3	48	1.1	-	G-20, G-33, ACP	-	-	-
Agrifood trade deficit countries									
Mexico	552	1.1	-2,065	0.8	G3, Costa Rica, Bolivia, Nicaragua, Chile, Northern Triangle, Uruguay, NAFTA, EU, Israel, EFTA, Japan	G-20	41.4	0.72	48.0
El Salvador	-33	0.9	-264	0.6	CACM, Mexico, Chile, Dominican Rep., Panama, USA	TP	-	-	51.0
Dominican R.	-146	0.4	-340	0.5	Central Am., CARICOM, USA	G-33, ACP	-	-	14.5
Venezuela	-357	0.3	-1,400	0.2	MERCOSUR, G3	G-20, G-33	60.0	0.88	-
Latin Am.	17,932	2.7	37,234	2.5	-	-	62.5	-	Approx.30

^a Source: Authors based upon information from COMTRADE, United Nations. The agricultural products include Chapters 1 to 24 of the Harmonized System. The data refer to the average for the years 2000-2005 for Argentina, Brazil and Mexico, 2000-2001 for Cuba, 2000-2003 for Honduras and the year 2001 for the Dominican Rep.

^b Source: Kj llerstr m (2004). Abbreviations: MERCOSUR (Mercado Com n del Sur); CAN (Comunidad Andina de Naciones); CARICOM (Caribbean Community and Common Market); CACM (Central American Common Market); NAFTA (North Americas Free Trade Agreement); EFTA (European Free Trade Agreement), EU (European Union).

^c Groups' profiles: G-20 defends an ample tariff reduction for the agricultural sector, with special treatment for sensitive products; G-33 is more moderate than the G-20 for tariff reductions; the ACP group (Asia, Caribbean and Pacific) is conservative as to tariff reductions and concerned for the erosion of unilateral preferences and the impact of liberalization on food prices and food aid; the TP group (Tropical Products) looks for a greater liberalization for the tropical products as a compensation for the unilateral preferences given by the EU to the ACP group.

^d Source: Authors on the basis of the Agricultural Census of: Argentina 1988, Brazil 1996, Chile 1997, Colombia 2001, Honduras 1993, Mexico 1991, Nicaragua 2001, Panama 2001, Paraguay 1991, Peru 1994, Uruguay 2000, Venezuela 1997.

Notes

¹ A free translation of the article “La agricultura frente a la apertura comercial: estructura productiva y posibilidades de adaptación en América Latina” presented at the International seminar ACRALLENOS (Comparative Analysis of the agriculture and agri-food relations on North South Free Trade): “Trade liberalization of agriculture and developing countries: from expected results to effective impacts”, Santiago, Chile, 9th to 11th of November 2006. The authors wish to thank Sofía Astete, of ECLAC’s Agricultural Development Unit, for the translation.

² According to the United Nations classification, Latin America includes all the Spanish speaking countries of the American continent plus Brazil and Haiti. Its classification therefore excludes Belize and Guyana but includes the Dominican Republic and Cuba.

³ National Accounts include agriculture, livestock, forestry, fishing and hunting in the primary agricultural sector.

⁴ Chapters 1 to 10 of the Harmonized System.

⁵ Chapters 1 to 24 of the Harmonized System.

⁶ Again including forestry, fishing and hunting.

⁷ Argentina, Brazil, Chile, Ecuador, Nicaragua, Panama, Peru and Uruguay.

⁸ In more than half of the FTAs signed by the region’s countries the agricultural products, both primary and processed, have a tariff reduction period of over ten years and, additionally, have a great number of exceptions to free trade (Kjöllerström, 2004). These products also are affected by special clauses of commercial protection (safeguards).

⁹ The transition period towards free trade in the Australia-US FTA amounts to 20 years, this is the longest transition period among the agreements signed by the US. The agreement also includes more exclusions and trade protection measures for agricultural products, including a safeguard (for beef meat) which will continue operating even after the transition period. (Rodrigues, 2006b).

¹⁰ The agricultural products most frequently excluded from FTAs by Latin American countries are: sugar, dairy products, cereals like wheat, rice and corn, poultry meat, and fresh produce like onions, potatoes and tomatoes. These products have been excluded in at least 10 out of 16 FTA’s analyzed by Kjöllerström (2004).

¹¹ For more information, see www.ams.usda.gov

¹² The TRIPS agreement establishes that member countries will deny or invalidate registering the brand of a factory or trade which contains or consists of a geographic indication of products that do not originate in the indicated territory. In the specific case of wines and spirits, the agreement has exceptions with the aim to protect the right of use of geographic indications registered in other countries, if these have been in use continuously and in good faith previous to the implementation of the agreement.

¹³ Mulder et al., 2003; Rodrigues and Torres, 2003; UNDP et al., 2005; Rodrigues, 2006a; Parada and Morales, 2006.

¹⁴ Mulder et al. (2003) and Rodrigues and Torres (2003)

¹⁵ It is so in all cases analyzed, in spite of the large differences in their agricultural productive structures.

¹⁶ Notwithstanding the higher need for support, the levels of rural public expenditure in Latin America and the Caribbean (19 countries) strongly decreased between 1985 and 2001, in absolute terms and in terms of expenditure per inhabitant. (<http://www.rlc.fao.org/prior/desrural/gasto>)

¹⁷ Farmers little or not linked to agricultural product markets still represent a high percentage in the countries of the region.

¹⁸ See among others Edward Schuh’s seminal work of 1974 on Exchange rate and US agriculture, and the series of World Bank studies leading to *The Political Economy of Agricultural Pricing Policy* in the mid-eighties (Anne O. Krueger, Maurice Schiff and Alberto Valdés).

¹⁹ In the late nineties, ECLAC undertook a series of studies on the impact of structural reforms, sectoral policies and their impact on the agricultural productive structure. See, among others,

Salcedo, Leite y Moutinho, Portilla, Crespo, etc.; all published in ECLAC's *Serie de Desarrollo Productivo* (www.cepal.org)

²⁰ See, for instance, López (2005).

²¹ In developing countries, for example, as income and urbanization rises, the consumption of meats, oils and dairy products increases considerably.

²² Kjölleström (2004a) shows several examples that emphasize the importance of transaction and transport costs in the articulation of small farmers to the internal and export markets.

²³ FAO (2004) did a wide study on transport of agricultural products in Central America, Mercosur plus Chile and Bolivia, and the Andean Community, in which the specific problems of each region are outlined as well as proposals for strategies for their improvement.

²⁴ For instance, during the first 10 years of NAFTA there has been an explosive increase (50% annually) of greenhouse tomato production in Canada (Cook & Calvin, 2005). Although Mexico has traditionally been a tomato producer and exporter, and it has continued to do so in the last years, it is evident that Canada has been able to compete favourably in the US tomato market, capturing 2% of the market share in 1994 and 15% in 2005. On the contrary, Mexico reduced its market share from 95% to 84% over the same period.

²⁵ More than a dozen countries of the region have not launched an Agricultural Census in the last ten years. Little is therefore known on the large and heterogeneous sector of small-scale farmers, beyond case study evidence. (<http://fao.org/es/ess/census/wcares/default.asp> & Salcedo, 2005).

²⁶ From The Council on Food Agricultural and Resource Economics (www.cfare.org); even in countries like the U.S.A., where the agricultural sector is relatively more homogeneous than in Latin America, the Council calls to avoid "one size fits all" policies.

²⁷ FAO evaluations of the Mexican programme *Alianza para el Campo* (<http://www.evalalianza.org.mx/>), have shown how an investment in cattle auctions, which gave transparency to the trading process, increased the income of cattle farmers more than the one derived from productive incentive programmes such as the improvement of pastures or animal genetics.

²⁸ According to Regulation (CE) No. 178/2002 of the European Parliament, traceability can be defined as the possibility to find and trace, through all the stages of production, transformation and distribution of food, feed or animal for food production or a substance destined or with the probability to be incorporated into food or feed.

²⁹ FAO defines GAP as a series of principles, norms and technical recommendations applicable to the production, processing and transport of food with the aim to insure hygiene, human health and environmental protection through ecologically safe, hygienically acceptable and economically feasible methods. (<http://www.rlc.fao.org/prior/segalim/prodalim/prodveg/bpa/default.htm>)

³⁰ In FAO (2006) there is a detailed analysis of the challenges faced by the countries of the region in relation to safety and phyto and zoo-sanitary standards.