PART II.

THE VALUE OF AGRICULTURAL PREFERENTIAL ACCESS

Abstract

The preference margins calculated in Part I, along with the import data, are used to calculate the value of the preferences provided by each Quad country (Canada, European Union, Japan, and the United States). Preferential access to Quad agricultural markets generated, on average, an additional USD 1.4 billion a year from 2001 to 2003 to countries with preferential access, compared to almost USD 90 billion of dutiable agricultural produce imported each year. The value of preference margins (VPM) is generated primarily by exploiting the European Union's non-reciprocal preferential schemes, with the United States a distant second. The scheme with the largest preferential receipts is the European Union's scheme for Africa, Caribbean, and Pacific countries (ACP), which have an average VPM of USD 766 million. Preferential receipts provided by the Quad countries are concentrated in a few developing countries and for a few commodities. The top five ACP recipients obtained 35% of the ACP VPM, while exports of sugar and bananas by the ACP countries accounted for 73% of their preferential receipts. Least Developed Countries (LDC) do not capture a significant amount of preferential receipts. Indeed, none of the top 30 countries in terms of VPM is an LDC. Although the VPM is relatively small compared to dutiable trade and only a handful of countries receive the bulk of the proceeds, a number of countries are reliant on preference schemes as their exports tend to be concentrated on a few commodities that benefit from substantial preference margins. For 37 countries, the VPM is more than 0.5% of their agricultural value added, while for 11 it is more than 10%.

Introduction

Part II combines both trade and tariff data to examine the following questions; what is the value of the preferential access that the Quad countries provide to developing countries through a selected set of non-reciprocal arrangements? Which programmes generate the largest remuneration, which countries are the largest benefactors, and what products generate these benefits? Among recipient countries, which ones are more reliant on preferences for their agricultural exports and which ones may be more susceptible to preference erosion in an eventual multilateral trade liberalisation?

Part II goes beyond examining the preferential margins as they appear on the tariff schedule as in Part I. Rather, it combines tariff and trade data to compute the value of the preferential margins based on actual trade flows by individual countries in each of the non-reciprocal programs described in Part I. Thus, it looks at what each of the Quad countries actually imports, from whom, and calculates the value of the preferential access for these trade flows. As stated in OECD 2005, data on actual utilisation of the various preferential schemes are difficult to find for the Quad countries, with the exception of the US. Therefore, like other studies (OECD, 2004; Alexandraki and Lankes; Low *et al*), the analysis is based on the assumption that eligible countries fully utilise their preferences. For agricultural products, when all preferential programmes are taken into account, utilisation rates are very high (OECD, 2005) but not 100%. The 100% utilisation assumption, therefore, overestimates the value of preferences and, as noted by Amiti and Romalis, likely overestimates the costs of preference erosion. There are other assumptions that underpin the analysis that also may tend to overstate the value of preferential access. These assumptions are deliberately chosen to provide an upward bias to the calculations in this report, thus providing the maximum potential value of preferential access in order to provide an upper limit on their value and potential magnitude of preference erosion for affected recipients. However, for the EU, the tariff and trade data are not at the same HS level. The aggregation of the tariff data to the same level as the trade data, affects the calculated VPM for the EU. The study does not make a judgement on the welfare implications of the current preferential schemes for the participants, or on the welfare implications of their reduction or elimination.

As indicated in Annex II.2, the value of preferential margin (VPM)[1] depends upon the preferential margins and imports. The next section provides an overview of the agricultural imports during the 2001 to 2003[2] period by each of the Quad countries. The sections that follow discuss, for each Quad country, their agricultural imports under each preferential regime and the VPM for those trade flows. These sections are followed by a section describing the relative contribution each Quad country makes to overall preferential receipts and the importance of those receipts to the beneficiaries, and the last section draws conclusions.

Agricultural imports by the Quad countries

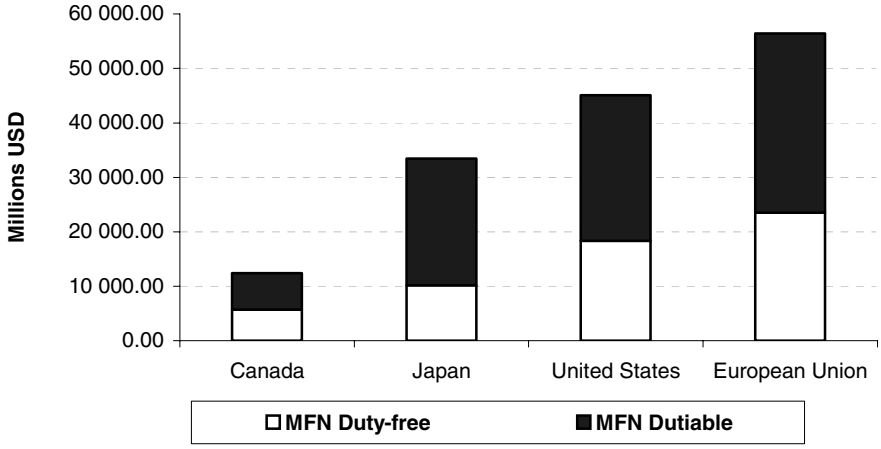
In this section, a brief overview is given of the agricultural imports by each of the Quad countries; the value that each of these countries imports, whether they are dutiable or not and where they come from. This information is provided to give a frame of reference for the preferential access discussion to follow. Annual import data over the 2001 to 2003 period is used to smooth out some of the yearly aberrations. Any period suffers from some shortcomings since in a dynamic world, things change and no one

period is "typical". For example, during the period covered by the analysis, the recent EU enlargement had not yet taken place and the US ended the ATPA scheme in 2001 but renewed it in August 2002. In 2003, the EU's EBA programme was still relatively young and countries were adjusting to its use. Its utilisation and the VPM may increase in the future as countries become more familiar with the requirements. Furthermore, some of the information is lost when the import data at the tariff-line level are merged with the tariff data. Countries often change the nomenclature at the tariff-line level as there is not always a one to one mapping between the tariff and the import data. Consequently, the trade data used to compute the VPM is somewhat lower than that from reported trade statistics.

Agricultural (as defined at the WTO) imports by Canada in 2001 totalled USD 12.3 billion[3] rising to USD 14.5 billion in 2003. Following the merge between the trade and tariff data, the value of imports used for the analysis is USD 11.2 billion in 2001 increasing to USD 13.6 billion in 2003. The reported value of imports for the other Quad countries is also that resulting after the merger of trade and tariff data.

As reported in OECD 2005b, a large share (31%) of Canada's tariff schedule is duty-free, that is MFN tariffs are zero, and these are provided to products with meaningful trade flows. In 2001, USD 5.2 billion worth of goods entered Canada duty free and their value increased to USD 6.3 billion in 2003. Over the three year period, duty-free imports averaged USD 5.7 billion or 46% of Canada's imports (Figure II.1). These goods are commercially exchanged and participants capture normal returns. But, for these imports, preferential access is meaningless. In terms of Figure II.2.1 in Annex II, for 46% of Canada's imports, areas D and E do not exist.

Figure II.1. Agricultural imports: Quad countries average 2001 - 2003



Preferential access represents about 54% of Canada's imports or USD 6.7 billion a year (Figure II.1). Their value rose from USD 6 billion in 2001 to USD 7.3 billion in 2003. It is among these imports where area D in Annex Figure A.1 is positive, and below we report on the value of that area.

Japan's imports for the analysis totalled USD 32.6 billion in 2001, increasing to USD 34.6 billion in 2003. Japan's tariff schedule contains a sizeable share of duty free tariff lines (OECD 2005b). The combined tariff and trade data suggest that Japan

provides considerable access to its agricultural market duty-free. In 2001 duty-free imports totalled USD 9.6 billion almost 30% of total. In 2002 the year with the highest share of trade with tariff information, duty free imports totalled USD 10.6 billion (32% of total). Over the three year period, an average of USD 10.2 billion, (30% of Japan's agricultural imports), were duty free. Dutiable imports averaged USD 23.3 billion over the three year period. It is within this group of traded commodities where preferential receipts potentially reside (Figure II.1).

US imported USD 40 billion in agricultural goods which grew to USD 49.9 billion in 2003. The US, as the other Quad countries, provides duty-free access, on an MFN basis, to its agricultural markets for a sizeable share of its tariff schedule (OECD 2005b), and MFN duty-free access is given to products with substantial trade flows. How important is trade in duty-free products? In 2001, duty free imports totalled USD 16.4 billion, 41% of total imports. In 2003 total agricultural imports increased as did the value of duty-free imports, totalling USD 20.1 billion (40% of total). During the three year period, duty-free imports averaged USD 18.3 billion per year (Figure II.1), about 41% of imports. Dutiable imports, imports where preferential access can provide preferential receipts, averaged USD 26.8 billion per year (Figure II.1).

The EU is the largest importer of agricultural products. In 2001, agricultural imports totalled USD 47.5 billion which grew to USD 66.2 billion in 2003.[4] As reported in OECD 2005b, the EU also provides duty-free access, on MFN basis, on a sizeable portion of its agricultural tariff schedule. The data suggest that a sizeable portion of EU imports take place duty-free. In 2001, imports of products facing zero duty rates totalled USD 20.6 billion, or 43% of total imports. By 2003, imports in products with zero rates totalled almost USD 27 billion dollars (40% of imports). During the three year period, duty-free imports were USD 23.5 billion a year (Figure II.1), 42% of imports. Obviously, the other 58% of imports, an average of USD 32.9 billion per year, faced positive MFN tariff rates (Figure II.1). The focus of the study is on this data set as it represents the group of traded commodities where erosion of preferential receipts can occur.

This brief overview suggests that preferential access, concerns only a portion of Quad country agricultural imports. A sizeable share (30% to 46%) of imports are duty-free on an MFN basis and therefore, not subject to erosion. This is not to imply that duty-free trade is not important. Exports, whether dutiable or not, provide employment and contribute to growth and development. However, because duty-free exports do not provide any extra benefits to the exporting country compared to preferential exports, they are not the focus of this study. Similarly, even though a large part of agricultural imports enter duty-free, there may be countries whose agricultural exports to the Quad are particularly reliant on preferences. In such cases, preference erosion may have detrimental effects on their agricultural sector. The following sections identify from which country and non-reciprocal programmes each Quad country sources its imports and computes the VPM for each programme.

Canada

The previous section gave a brief overview of Canada's agricultural imports, but, in order to put the value of preferential access in perspective, it is necessary to indicate which group of countries are supplying Canada's imports. Countries are classified into broad groups indicating participation in Canada's preferential schemes based on eligibility as reported in OECD (2005b) (reproduced in Annex II.1). Thus, all imports from countries that are eligible for Canada's Generalised Preferential Tariff are classified

as entering under that scheme; countries belonging to the other non-reciprocal schemes are also classified similarly. As stated previously, this assumption implies full utilisation for eligible products.[5] Imports from Mexico and the US are assumed to enter under NAFTA and are reported here to complete the trade data. No attempt is made to determine the value of preferential receipts under this programme. Countries that are not eligible for any of Canada's non-reciprocal schemes or NAFTA are classified as MFN and MFN tariffs are assumed to apply to imports from these countries.

Table II.1 shows Canada's duty free and dutiable imports by preferential scheme. The data suggest that on average, 60% of Canada's duty free imports are supplied by the US and Mexico, her NAFTA partners. About 23% of Canada's imports are supplied by the more developed developing countries belonging to the GPT programme and another 17% is provided by countries not eligible for any non-reciprocal programmes classified as MFN. Countries eligible for Canada's LDC and Commonwealth Caribbean Countries Tax (CCCT) provide less than 1% of Canada's duty-free imports, suggesting that these countries may not have a comparative advantage in the production of these items.

Table II.1. Duty-free and dutiable imports by preferential scheme: Canada 2001-2003

	2001	2002	2003	Average
		Million USD		
Duty Free				
GPT	1 165	1 224	1 499	1 296
LDC	13	13	35	20
CCCT	11	11	13	12
MFN	860	975	991	942
NAFTA	3 116	3 419	3 758	3 431
Total Duty Free	**5 164**	**5 642**	**6 296**	**5 701**
Dutiable				
GPT	564	647	761	657
LDC	1	2	1	1
CCCT	21	21	25	22
MFN	873	922	1 096	964
NAFTA	4 590	5 075	5 375	5 013
Total Dutiable	**6 049**	**6 667**	**7 257**	**6 658**

Perhaps imports from non-reciprocal preferential partners are more concentrated on goods with positive MFN rates where they may be able to take advantage of preferential access? The data do not support such a hypothesis. Looking at Canada's imports when the MFN duty is positive (bottom half of Table II.1) a similar but even starker picture in terms of LDC and CCCT countries share of Canada's imports emerges. In this case, about 75% of Canada's imports when the MFN duty is positive come from either Mexico or the US, while another 14% comes from MFN countries, leaving about 10% for countries with preferential access. Thus, at this level of aggregation, area B in Annex figure II.2.1 is very small in the case of Canada, suggesting that the VPM (area D) is also relatively small.

It is also revealing to examine which are the primary products imported by Canada and how this may differ whether looking at all imports or only dutiable imports. What products are imported by Canada? At the HS-2 digit level, the largest import sector averaging about USD 1.6 billion or 13% of imports is *Fruits* (Chapter 8) followed by *Vegetables* (Chapter 7) with USD 1.2 billion (10% of imports) and *Preparations of*

cereals (Chapter 19) with almost USD 1 billion (8% of total imports). These three broad product aggregates accounted for 31% of Canada's average imports during the 2001 to 2003 period.

When the focus is on dutiable imports, the import composition changes somewhat. The top three imported agricultural sectors are; *Preparations of cereals* (Chapter 19) with an average of USD 911 million per year (14% of dutiable imports), *Miscellaneous edible preparations* (Chapter 21) with USD 707 million a year and *Preparations of vegetables and fruit* (Chapter 20) with USD 572 million a year (Annex Table II.2.2). Products in these three aggregate groups comprised a third of all dutiable imports.

NAFTA countries are the dominant suppliers for most products, while countries belonging to the CCCT and LDC regimes provide a very small share of Canada's dutiable imports. Thus, there is not much scope for large preferential receipts for countries in these two schemes. Even countries in the Canada's GPT scheme which includes most of the major exporting countries among the developing world, do not have a large presence in most sectors. They supply 10% or more of Canada's import needs in only eight of the 23 broad sectors. This group of countries supply about 43% of Canada's imports of *Live trees and flowers* (Chapter 6), but as the table shows, the total pie is not very big as Canada's dutiable imports in this sector are only about USD 134 million per year. *Sugar and Confectionary*, (Chapter 17) is the second largest export sector for countries in the GPT scheme supplying about 35% of Canada's imports of this sector. And, here, the pie is larger as Canada imported on average some USD 550 million per year. It should be kept in mind that the value of preferential access depends not only on the value of imports but also on the size of the preferential margin. The trade results however suggest that preferential margins must be very large for the relatively small share of trade by the preference receiving countries to generate substantial VPM. The next section looks at the value of preferential access in Canada.

The value of Canada's preferential access

The product composition of imports suggests that most of Canada's imports are duty-free for many products where developing countries, especially the least developed countries may have a comparative advantage such as fruits and vegetables. In contrast, dutiable items tend to be more processed products that probably require branding and marketing, areas where developing countries may not have a comparative advantage. In this section, the value that Canada's preferential programmes generate for the various countries in the different schemes is provided.

Canada, through its various non-reciprocal programmes, generated more than USD 20 million in preferential receipts in 2001 and these increased to more than USD 29 million in 2003 (Table II.2). The lion's share of those receipts was captured by the more developed of the developing countries in the GPT scheme. These are the developing countries with the largest share of trade and the table shows that they capture the largest share of VPM. Over the three year period, the average VPM captured by countries in the GPT scheme was USD 23 million per year. Preferential receipts are a relatively small share of the value of Canada's dutiable imports from this group of countries, averaging almost 4% a year. The ratio of VPM to the value of all of Canada's agricultural imports from this group of countries is even lower, averaging 1.2% per annum. This suggests that even though these countries take advantage of the preferences provided, they are not overly dependent upon them as they export a broad set of commodities.

Table II.2. The value of Canada's preferential access: 2001–2003 and value of preference margin (VPM) as a share of average imports

	2001	2002	2003	Average	Average VPM as a share of dutiable agricultural imports from eligible countries	Average VPM as a share of agricultural imports from eligible countries
		In thousand USD				
GSP	19 506	22 564	28 039	23 370	3.6%	1.2%
LDC	50	58	24	44	3.4%	0.2%
CCCT	927	935	1 155	1 006	4.5%	3.0%
Total	**20 483**	**23 556**	**29 218**	**24 419**	**3.6%**	**1.2%**

By far the largest recipient of Canada's GPT preferential receipts was Brazil with an average of USD 7.2 million per year (Figure II.2). These receipts represent 31% of the VPM captured by GPT countries but only 5% of Brazil's dutiable exports to Canada. The second largest recipient is China, averaging some USD 2.2 million per year, (9% of VPM) but only 3% of Canada's dutiable imports from China. The country with the largest dependence measured by the share of VPM in dutiable exports to Canada is Malaysia. Malaysia's average VPM of USD 1.1 million represents 8% of the value of dutiable exports to Canada. The data suggest that the preferential receipts are captured by a relatively few countries. The top ten countries in terms of average VPM during this period captured 77% of the preferential receipts whereas the remaining 99 trading partners captured only 23%.

Countries in Canada's LDC scheme, presumably the countries with the greatest need, obtained the least preferential receipts, reflecting the small share of their dutiable exports to Canada. As shown in Table II.1, most of Canada's imports from LDCs are duty-free. As already stated, LDCs capture normal returns from engaging in commercial exchange for these goods, but as there are no (meaningful) preferences for these duty-free imports they do not have the possibility to obtain additional preferential receipts, returns above those obtained in normal exchange. The countries in this scheme captured preferential receipts worth no more than USD 50 000 in 2001 but unlike countries in the other schemes, the VPM for these countries fell in 2003 to USD 24 000. Average VPM were USD 43 691 representing 3.6% of the value of their dutiable exports to Canada.

As was the case for the GPT scheme, the VPM is captured by a relatively few countries. The country with the highest VPM from this scheme over the three year period was Tanzania with an average of USD 9 839 per year representing almost 23% of preferential receipts from this group of countries (Figure II.3). Madagascar with less than USD 8 000 per year representing 18% of LDC country VPM was second. The top five countries received 75% of the VPM under this scheme. Although the value of preferential receipts as a share of dutiable imports is relatively low for the LDC countries, the VPM represent a relatively large share of exports to Canada for several countries. For Equatorial Guinea and Eritrea (not shown in the figure), VPM represent almost 11% of the value of Canada's dutiable imports from these countries, while for, Mauritania and Togo, VPM represent about 9% of the value of imports, the same as for Cambodia, Cape Verde, and Maldives (not shown in the figure).

The CCCT programme generated preferential receipts of USD 927 000 in 2001 which increased to more than USD 1.1 million in 2003 reflecting the higher imports in that year (Table II.2). The three year average VPM of a little more than USD 1 million per year, is

considerably lower than the preferential receipts captured by the countries in the GPT scheme. Although preferential receipts are much smaller, they represent a slightly larger share of dutiable imports from these countries, as the VPM average almost 5% of the value of dutiable imports.

The largest recipient country in this scheme is Jamaica, capturing on average USD 528 000 per year which represents more than half of the preferential receipts captured by the countries eligible for this scheme (Figure II.4). Jamaica does not appear to be dependent upon Canadian preferences however as the VPM as a share of Jamaica's dutiable exports to Canada are about 4% per year. The second largest beneficiary country is Barbados with an average of USD 152 000 per year representing about 15% of preferential receipts from this regime. As is the case for the GPT scheme, only a few countries capture the bulk of the preferential receipts. The top five countries capture almost 98% of the VPM. As indicated above, as a group, these countries are not overly dependent on Canadian preferences as the VPM represents about 5% of the value of dutiable imports from them. For some countries, however, the VPM represents a relatively more important component of their dutiable exports to Canada. Preferential receipts for Anguilla represent an average of about 10% of the value of Canada's dutiable imports from this country, while for Trinidad and Tobago the share is about 9%.

Figure II.2. The top ten beneficiary countries of Canada's GPT scheme and the value of preference margin as a share of dutiable imports (2001-2003)

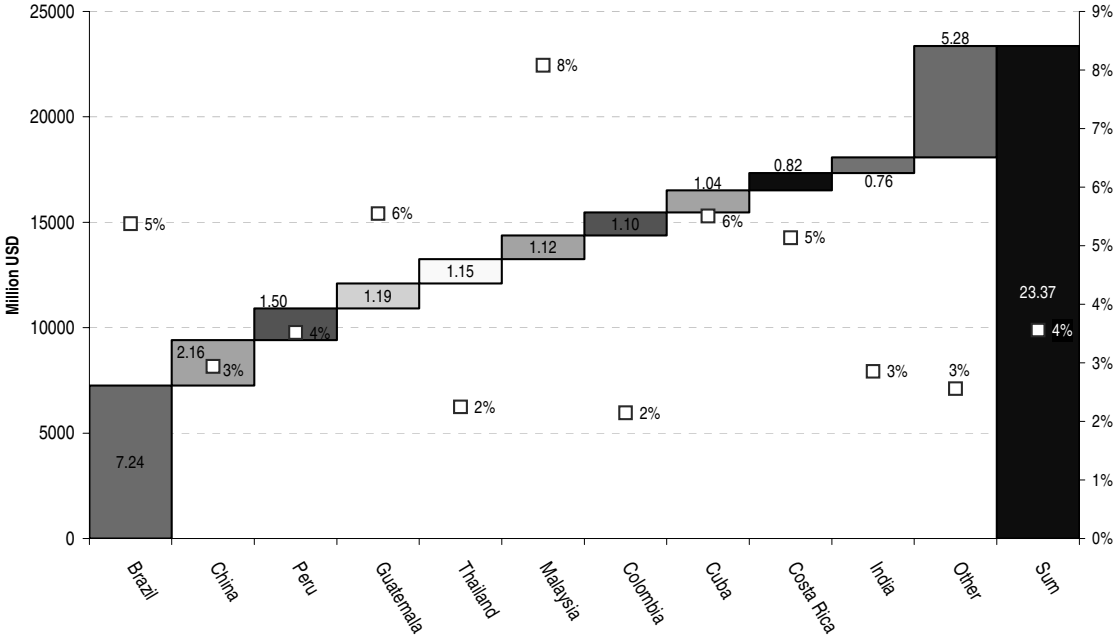


Figure II.3. The top ten beneficiary countries of Canada's LDC scheme and the value of preference margin as a share of dutiable imports (2001 – 2003)

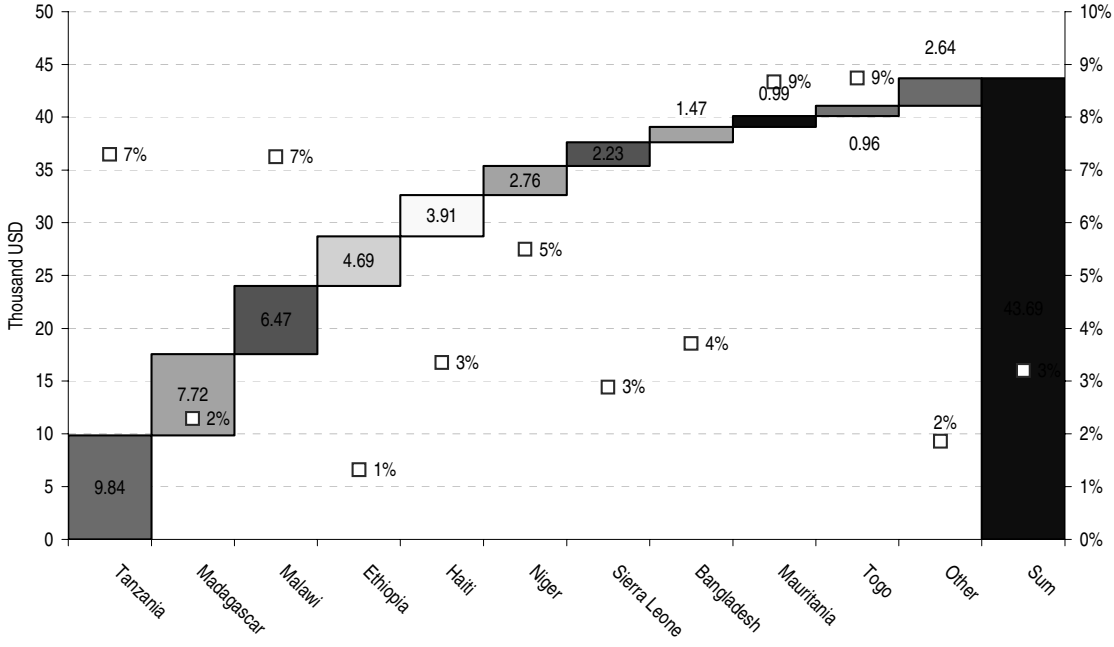
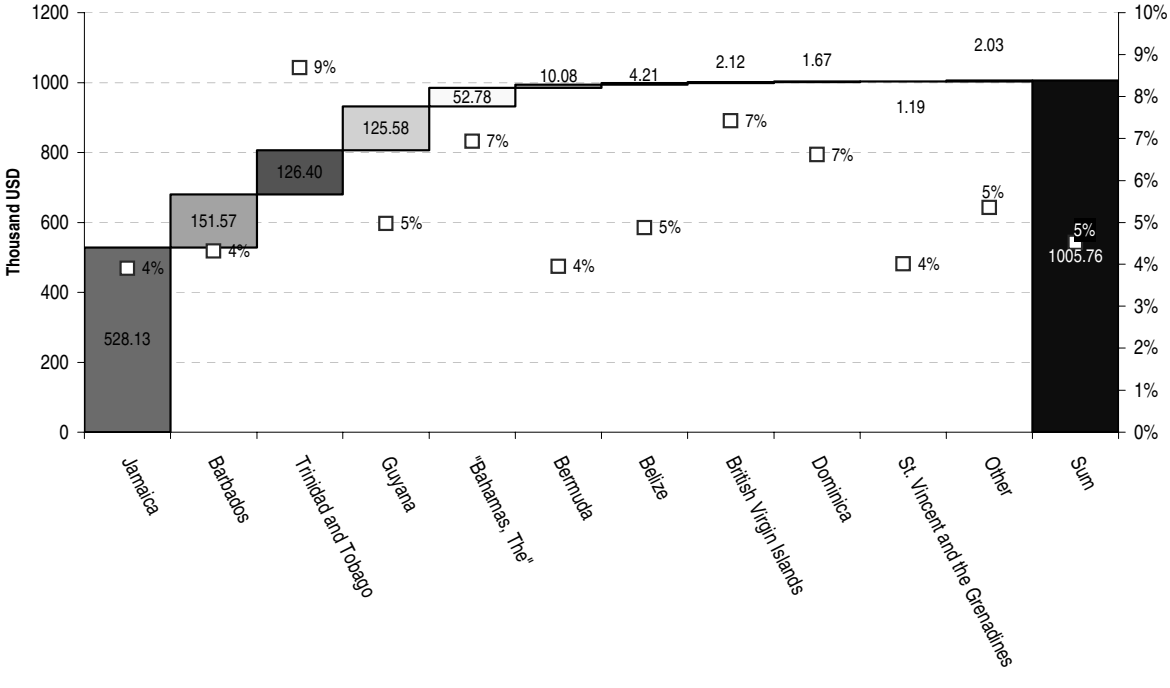


Figure II.4. The top ten beneficiary countries of Canada's CCCT scheme and the value of preference margin as a share of dutiable imports (2001 – 2003)



Which agricultural products contain preferential margins and generate preferential receipts? Table II3 shows average VPM for the 2001 to 2003 period at the HS-2 level. *Sugar and confectionary* (Chapter 17) is by far the largest sector with a VPM of almost USD 11 million a year, 44% of the total. The value of preferential access drops dramatically for the other sectors. The second and third largest sectors, *Preparations of cereals* (Chapter 19) and *Animal and vegetable fats and oils* (Chapter 15), each generate about USD 2.3 million a year.

For countries in the GPT scheme, *Sugar and confectionary* (Chapter 17), is by far the sector with the most preferential receipts, averaging USD 10.7 million a year (46% of total), followed by *Animal and vegetable fats and oils* (Chapter 15) with USD 2.5 million a year (10% of total), and *Preparations of cereals* (Chapter 19) with USD 2.4 million a year (10% of total). The countries in the LDC scheme obtain most of their preferential receipts from *Tobacco* (Chapter 24) with an average of USD 16 000 a year (36% of total), with *Vegetables* (Chapter 7) with an average of about USD 5 000 a year a distant second. Countries in the CCCT scheme on the other hand obtain most of their preferential receipts from *Beverages* (Chapter 22) with an average of USD 593 000 a year (59% of total), with *Preparations of cereals* (Chapter 19) with an average of almost USD 85 000 a year, a distant second.

Tariff rate quotas (TRQs) are a feature of Canada's agricultural import regime. However, the vast majority of agricultural imports are in products without TRQs. During the three year period 2001 to 2003, imports for products with TRQs averaged about 11% of imports. In 2001, imports of products with TRQs totalled USD 1.2 billion mostly trade within the quota (72% of the total). TRQ imports increased to USD 1.5 billion in 2001 with imports within the quota representing 65% of the total. During the three year period, in-quota imports averaged 68% of the USD 1.3 billion imports of TRQ products.

Preferential receipts generated by the TRQ products are relatively meagre as preferential margins are not very prevalent. For countries in the GPT scheme, the countries with the most preferential receipts, TRQ products represent about 4% of their total, while for the countries in the CCCT scheme the share of preferential receipts from TRQ products is even smaller (about 1% of the VPM). For the LDC scheme, the scheme with the lowest preferential receipts, TRQ products provide about 4% of the VPM in the last two years.

As indicated above, in addition to the data just described, import data were received for Canada from Finance Canada courtesy of the OECD's Trade Directorate. The data contains imports from developing countries for 2002 and 2003 along with information on which preferential programme was demanded. For more information see Kowalski (2005). From these data, agricultural products as defined at the WTO were collected to ascertain the value of preferential access based on programmes as requested by the exporting country. This provides a better indication of the VPM (assuming the request was granted) and enables one to determine to what extent the methodology adopted for this analysis (full utilisation) over or under-states the value of preferential access compared to utilisation based on programme request.

Table II.3. Average value of preference margin by sector: Canada 2001 - 2003

	GSP	LDC	CCCT	Total
	Thousand USD			
Chapter 17 Sugars and sugar	10 741.9	0.3	71.7	10 814
Chapter 19 Cereal, flour, starch, milk preparations and products	2 234.3	1.2	84.8	2 320
Chapter 15 Animal,vegetable fats and oils, cleavage products, etc	2 288.5	1.3	1.4	2 291
Chapter 23 Residues, wastes of food industry, animal fodder	1 228.4	0.0	0.3	1 229
Chapter 24 Tobacco and manufactured tobacco substitutes	1 206.7	15.9	0.8	1 223
Chapter 20 Vegetable, fruit, nut, etc food preparations	1 042.2	0.7	73.1	1 116
Chapter 22 Beverages, spirits and	404.2	4.3	593.0	1 001
Chapter 06 Live trees, plants, bulbs, roots, cut flowers etc	729.2	1.4	49.2	780
Chapter 21 Miscellaneous edible	686.0	2.0	77.9	766
Chapter 18 Cocoa and cocoa	649.7	2.4	0.2	652
Chapter 04 Dairy products, eggs, honey, edible animal product nes	462.5	0.4	2.0	465
OTHER *	455.4	4.0	5.1	465
Chapter 07 Edible vegetables and certain roots and tubers	342.8	4.9	35.1	383
Chapter 09 Coffee, tea, mate and	324.6	4.0	10.7	339
Chapter 10 Cereals	338.2	0.3	0.0	339
Chapter 11 Milling products, malt, starches, inulin, wheat gluten	119.2	0.5	0.1	120
Chapter 16 Meat, fish and seafood food preparations nes	51.3		0.0	51
Chapter 08 Edible fruit, nuts, peel of citrus fruit, melons	43.1	0.0	0.2	43
Chapter 12 Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	13.2	0.2	0.0	13
Chapter 02 Meat and edible meat	6.1			6
Chapter 05 Products of animal	1.6		0.0	2
Header 52 - Cotton.	0.4			0
Chapter 01 Live animals	0.0			0
Total	23 370	44	1 006	24 419

* Agricultural products other than cotton located in chapters above Chapter 24

The value of preferential access based on the programmes actually requested is provided in Table II.4. Although derived from different data, this table shows a similar pattern to the results presented above. Countries in the GPT scheme get by far the lions' share of the VPM with least developed countries receiving relatively small amounts. When comparing the data in Table II.4 with that of Table II.2, the results also demonstrate that our assumption of full utilisation of available preferential schemes, overstates the value of preferences. For example, average VPM for the two year (2002-2003) based on programme request (Table II.4) is some USD 4.6 million less than the two year average from Table II.2. This is especially apparent for least developed countries where Table II.4 shows average VPM of USD 3 000 compared to USD 41 000 over the

same period in Table II.2. Thus, at least for Canada, preferential receipts calculated based on the methodology of this paper are overestimated, providing an upper bound of their worth. The implication is that potential losses from preference erosion will also be exaggerated.

Table II.4. The value Canada's preferential access based on programme requested 2002 - 2003

	2002	2003	Average
		In thousand USD	
GPT	19 253	23 004	21 129
LDC	2	3	3
CCCT	575	685	630
Total	19 830	23 692	21 761

Japan

As for the other Quad countries, Japan's various suppliers were aggregated into GSP or LDC schemes, based on OECD (2005b). Countries outside of these two groups were classified as belonging to the MFN group without preferential access. Which group was the principle supplier during this time? Most of Japan's agricultural imports are supplied by countries that are classified as belonging to the MFN group, the group of countries without access to preferential tariff rates (Table II.5). In 2001, this group of countries provided USD 23.8 billion (73% of total duty-free and dutiable imports) while countries in the GSP scheme provided USD 8.7 billion (27% of total). Least developed countries belonging to the LDC scheme provided USD 163 million (about 0.5% of total). Although the magnitudes increased over time reflecting the increase in Japan's imports, the relative share did not change.

Table II.5. Duty-free and dutiable imports by preferential scheme: Japan 2001 - 2003

	2001	2002	2003	Average
		Million USD		
Duty Free				
GSP	2 330.32	2 432.81	2 474.62	2 412.58
LDC	154.05	133.17	165.28	150.83
MFN	7 155.46	8 058.43	7 599.11	7 604.33
Total Duty free	**9 639.83**	**10 624.41**	**10 239.01**	**10 167.75**
Dutiable				
GSP	6 348.86	6 574.64	6 805.75	6 576.42
LDC	8.78	9.45	12.16	10.13
MFN	16 602.55	15 915.24	17 580.01	16 699.27
Total Dutiable	**22 960.18**	**22 499.34**	**24 397.91**	**23 285.81**

Focusing on Japan's duty free imports alone, a similar pattern emerges. Countries in the MFN group are by far the largest suppliers to Japan averaging USD 7.6 billion (about 75% of duty-free imports), while countries in the GSP scheme provide USD 2.4 billion (about 24%). Averaging about USD 151 million per year, countries in the LDC group

have a somewhat greater share of duty free imports compared to total imports as they provide about 1.5% of Japan's duty free imports.

For dutiable imports, the imports with the potential to generate preferential receipts, the pattern is only slightly modified. Countries in the GSP scheme provide an average of USD 6.6 billion per year representing about 28% of dutiable imports, 4 percentage points greater compared to their share of duty-free imports. The opposite is true for countries in the LDC scheme as they provide on average less than half of one per cent of dutiable imports. Since Japan's LDC scheme is duty-free and includes more tariff lines than the GSP scheme, their lack of presence in Japan's dutiable import sectors suggests that the preferential access may not be provided to products of export interest to LDC's. Thus, although countries in the GSP scheme appear to have the potential to garner preferential receipts, countries in the LDC scheme have very little possibilities based on the historical volume of exports to Japan.

What are the major agricultural products imported by Japan? Looking at the HS-2 digit level, Japan's largest imports are in Chapter 2, (*Meat and edible meat offal*). Over the three year period, imports in this chapter averaged more than USD 7.2 billion per year, 22% of total imports. *Cereals* (Chapter 10) were the second most imported sector averaging almost USD 4 billion per year (12% of total). *Tobacco* (Chapter 24), *Oilseeds* (Chapter 12) and *Beverages* (Chapter 22) round out the top five imported sectors. These five sectors account for about 55% of imports.

Differentiating between dutiable and duty-free products, *Cereals* (Chapter 10) with average imports of more than USD 3 billion per year is the largest duty-free sector (32% of total duty-free imports). Duty-free cereal imports represent about 83% of total cereal imports. At first glance, this may seem surprising given that cereals includes wheat and rice, two products that are considered to have relatively high protection in Japan and for which Japan has scheduled TRQs. The data show that most of Japan's imports of these products occur within the quota facing an MFN tariff rate which is zero. Thus, preferential rents for in-quota imports are not feasible. With an average of USD 2.2 billion per year of duty-free imports, *Oilseed* products (Chapter 12) are the second largest sector (22% of total duty-free imports). As a matter of fact, duty-free imports of oilseeds represent 88% of total oilseed imports. All cotton imports are duty free while 99% of *Live animals* (Chapter 1) imports are duty-free.

In contrast, all of Japan's imports in three sectors, *Cereal preparations* (Chapter 19), *Preparation of fruit and vegetables* (Chapter 20), and *Miscellaneous edible preparations* (Chapter 21) face a positive MFN duty. Even though there are also duty-free imports, the largest import sector with positive duties is Chapter 2, *Meat and edible meat offal* with an average USD 7.1 billion per year (31% of all dutiable imports), followed by *Beverages* (Chapter 22) with average dutiable imports of USD 2.1 billion (9% of dutiable imports).

Annex Table II.2.4 shows the three year average imports by HS-2 level and the group of countries that provided those imports. As already stated above, most of dutiable imports are supplied by countries that belong in the MFN category. Interestingly, countries in the GSP scheme supply more than 50% of Japan's imports in nine sectors, providing almost 80% of Japan's imports in fpir sectors. But, the imported value of these sectors represent only about a quarter of Japan's dutiable imports, which again suggests that the scope of preferential receipts is not large. This is especially true for countries in the LDC scheme where their share of dutiable imports in any sector is less than 1%.

The value of Japan's preferential access

The trade data described above suggest that the scope of preferential receipts for LDCs is rather limited since much of Japan's imports from these countries occurs free of MFN duties. Furthermore, these countries export very few dutiable products where they can take advantage of the preferential duty-free access provided. The scope for preferential receipts for GSP countries on the other hand appears more promising.

During 2001 to 2003, the VPM for Japan's GSP and GSP-LDC non-reciprocal programmes was about USD 45 million per year (Table II.6). These preferential receipts represent less than 1% of the value of dutiable imports during this time. The countries in the LDC scheme garnered an average of USD 326 000 per year, less than 1% of total VPM. Although not very large, VPM represent 3.2% of the value of dutiable imports over the period, a much larger share than that for countries in the GSP scheme. Obviously the bulk of the VPM, USD 44.5 million per annum (more than 99%) was obtained by the more developed developing countries belonging to the GSP scheme. The VPM for these countries represents, however, less than 1% of the value of dutiable imports from them. Thus, even though Japan's LDC scheme provides larger preferential margins and includes more items than the GSP scheme, (OECD, 2005b), the results suggest that these countries are not able to take advantage of this.

Table II.6. The value of Japan's preferential access: 2001 – 2003 and the value of preference margin (VPM) as a share of average imports

	2001	2002	2003	Average	Average VPM as a share of dutiable agricultural imports from eligible	Average VPM as a share of agricultural imports from eligible countries
		Million USD				
GSP	43.8	43.7	46.1	44.5	0.7%	0.5%
LDC	0.3	0.3	0.4	0.3	3.2%	0.2%
Total	**44.0**	**44.1**	**46.5**	**44.9**	**0.7%**	**0.5%**

Given the high concentration of Japan's imports supplied by a relatively few countries, it is not surprising that the bulk of preferential receipts are also collected by a relatively few countries. This is true for both the LDC and the GSP schemes. China was the largest beneficiary from the GSP scheme, averaging more than USD 11.5 million per year (26% of total VPM from the GSP scheme) (Figure II.5). Another of Japan's Asian neighbour, Thailand, captured the second highest amount of preferential receipts, averaging almost USD 11 million per year (24% of total). The top five suppliers captured 84% of total VPM (USD 39 million). Overall, six countries captured more than USD 1 million in preferential receipts per year. The other USD 5.5 million is distributed among the remaining 93 trading partners that are eligible for the GSP scheme. However, 30 counties within this scheme do not receive any preferential receipts as all of their dutiable exports (an average of USD 15 million per year) are excluded from the scheme.

In general, even though the countries in the GSP scheme capture the bulk of the VPM, it represents a relatively small share of the value of their dutiable exports to Japan (less than 1%), suggesting little reliance on exporting preferential products. Alternatively, one could argue that Japan's preferential scheme is limited in its product coverage reducing the scope for garnishing preferential receipts. However, for one country, Argentina, the VPM represents about 7% of Japan's dutiable imports from that country.

Figure II.5. The top ten beneficiary countries of Japan's GSP scheme and the value of preference margin as a share of dutiable imports (2001 – 2003)

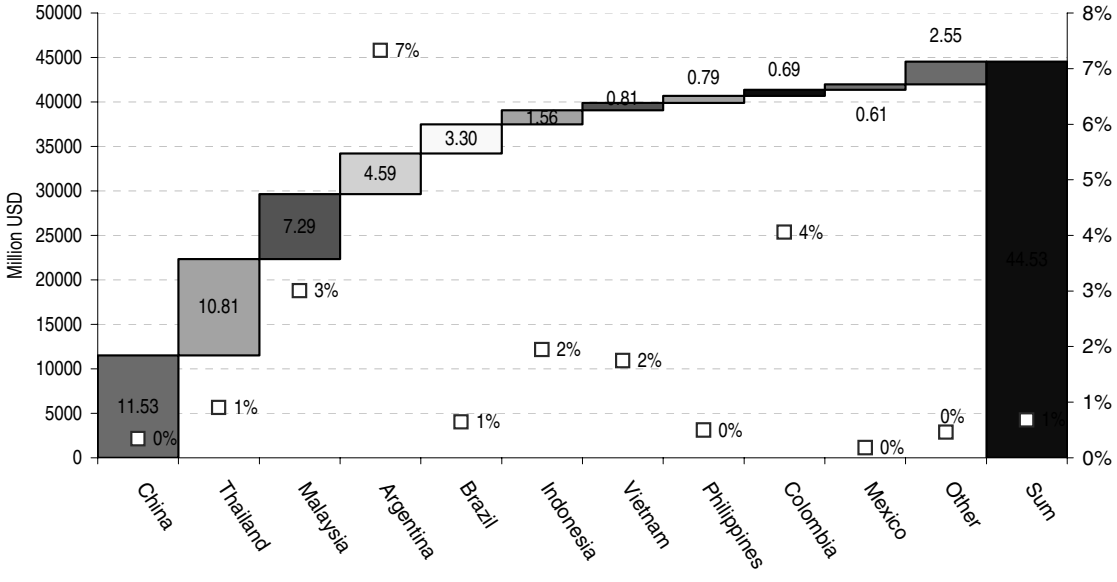
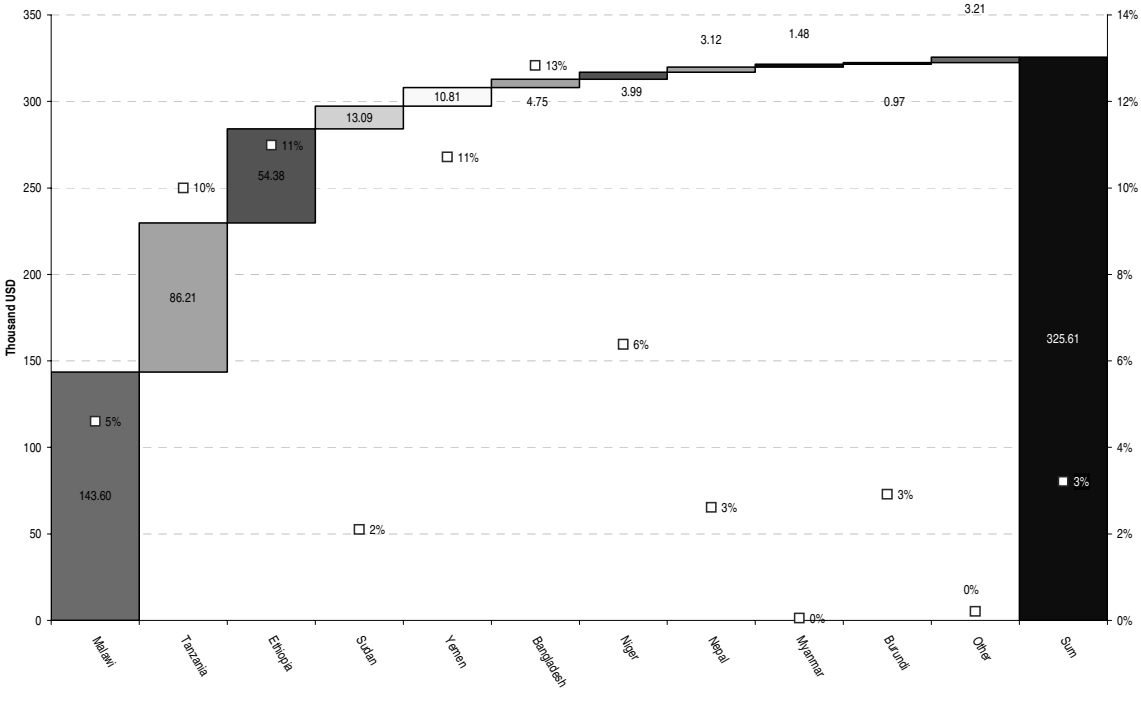


Figure II.6. The top ten beneficiary countries of Japan's LDC scheme and the value of preference margin as a share of dutiable imports (2001 – 2003)



Among the LDCs, Malawi captures most of the VPM averaging almost USD 144 000 per year (44% of total LDC VPM) (Figure II.6). Tanzania, with an average of USD 86 000 per year is the second largest recipient (26% of total). Overall, the top five countries capture 95% of the VPM (USD 308 000) provided by Japan to LDCs through this scheme. The other 23 LDC countries that provided Japan with dutiable goods captured the 5% of preferential receipts not captured by the top five. As a matter of fact, nine countries, with dutiable exports averaging USD 1.4 million per year (14% of dutiable imports) exported goods that were excluded from this scheme and did not capture any preferential receipts. Chief among these countries is Vanuatu which exported an average of USD 1.1 million per year (third largest supplier) but did not capture any preferential receipts.

Although the VPM as a share of total dutiable imports from LDCs is relatively low, for some countries, they represent a more significant share of their dutiable imports. For example, the almost USD 5 000 in annual preferential receipts collected by Bangladesh represents 13% of her dutiable exports to Japan. For another three countries, Tanzania, Yemen and Ethiopia, the VPM represent at least 10% of dutiable imports.

What are the sectors that are generating the VPM? For countries in the LDC scheme, most of the preferential receipts are generated through exports of primary agricultural products that require little if any processing. This has one advantage; rules of origin requirements should be fairly easy to ascertain and meet. Most of the VPM for LDCs are generated through Japan's imports of *Fruits* (Chapter 8) with an average of USD 136 000 per year, and *Animal and vegetable fats and oils* (Chapter 15) primarily *Beeswax,* with an average of USD 116 000 per year (Table II.7). Japan's imports of these two sectors provided 77% of annual VPM for the countries in this scheme.

There are many sectors however that appear to be excluded from Japan's preferential scheme for LDCs. These sectors include among others, *Meat* (Chapter 2), *Dairy* (Chapter 4), and *Cereals* (Chapter 10). In most cases, Japan's imports from LDCs in the excluded sectors are relatively small, perhaps reflecting the lack of preferential access in these markets. But, Japan imported about USD 1 million a year of items in the *Meat* sector (Chapter 2) from these countries, one of only four sectors with imports averaging more than USD 1 million per year, but the only one without preferential receipts.

For countries in the GSP scheme, most of the VPM are generated through Japan's imports of *Other* (products with HS numbers greater than Chapter 24 other than *Cotton*) with an average of USD 10.6 million per year (Table 7) and *Beverages* (Chapter 22) with an average of almost USD 8 million per year (18% of total). Excluding the *Other* category, the top sectors in addition to *Beverages* (Chapter 22) for the GSP countries are processed agricultural products such as *Animal or vegetable fats and oils* (Chapter 15) *Miscellaneous edible preparations* (Chapter 21), *Preparations of cereals* (Chapter 19) and *Preparations of vegetables, fruits, etc.* (Chapter 20) sectors where the LDC countries (with the exception of Chapter 15) generated little if any preferential receipts. Since the LDC scheme contains at least as good and often larger preferential margins, the data suggest that their ability to compete with countries in the GSP scheme is limited. This seems to extend to those products where trade by LDCs does generate preferential receipts. For example, the top sector for generating preferential receipts for the LDC scheme is *Fruits* (Chapter 8) with an average of USD 136 000 per year. In contrast, the VPM in this sector averages USD 1.4 million per year for countries in the GSP scheme.

Table II.7. Average value of preference margin by sector: Japan 2001 - 2003

	GSP	LDC	Total
	Thousand USD		
OTHER *	10 613	1	10 614
Chapter 22 Beverages, spirits and vinegar	7 971	0	7 972
Chapter 15 Animal,vegetable fats and oils, cleavage products, etc	6 040	116	6 157
Chapter 21 Miscellaneous edible preparations	4 531	0	4 531
Chapter 19 Cereal, flour, starch, milk preparations and products	3 406	4	3 410
Chapter 20 Vegetable, fruit, nut, etc food preparations	2 603	0	2 604
Chapter 12 Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	1 955	25	1 980
Chapter 07 Edible vegetables and certain roots and tubers	1 971	1	1 972
Chapter 08 Edible fruit, nuts, peel of citrus fruit, melons	1 446	136	1 582
Chapter 09 Coffee, tea, mate and spices	1 513	37	1 549
Chapter 06 Live trees, plants, bulbs, roots, cut flowers etc	946	0	947
Chapter 14 Vegetable plaiting materials, vegetable products nes	620	0	620
Chapter 05 Products of animal origin, nes	521	1	522
Chapter 18 Cocoa and cocoa preparations	203	4	207
Chapter 23 Residues, wastes of food industry, animal fodder	112		112
Chapter 13 Lac, gums, resins, vegetable saps and extracts	78	0	78
Chapter 04 Dairy products, eggs, honey, edible animal product nes	1	0	1
Chapter 24 Tobacco and manufactured tobacco substitutes	0		0
Chapter 17 Sugars and sugar confectionery	0	0	0
Chapter 16 Meat, fish and seafood food preparations nes	0		0
Chapter 11 Milling products, malt, starches, inulin, wheat gluten	0	0	0
Chapter 02 Meat and edible meat offal	0	0	0
Chapter 10 Cereals	0	0	0
Total	**44532**	**326**	**44858**

* Agricultural products other than cotton located in chapters above Chapter 24

TRQs are a feature of Japan's agricultural import regime. But, the vast majority of trade is in products without TRQs. During the three year period 2001 to 2003 imports for products with TRQs averaged about 6% of total imports, almost exclusively imports within the quota. In 2001, within quota imports from all sources totalled USD 1.88 billion and these increased to a little above USD 2 billion in 2003.

Within TRQs, Japan does not provide preferential access to the countries in the GSP or LDC scheme above and beyond what is provided to any other partner. That is, all countries face the MFN rates. Thus countries have to compete with all suppliers to obtain quota rents that may be provided by the difference between the in-quota and out-of-quota tariff rates (assuming the in-quota rate is not the binding instrument). Since the focus of the study is on non-reciprocal arrangements, calculating the value of quota rents for the TRQ scheme is beyond the scope of this paper. Erosion, the difference between the in-quota and out-of-quota rates, if it occurs in the case of Japan's TRQ products will affect all suppliers and not just the beneficiary countries of Japan's non-reciprocal schemes. Interested readers are referred to OECD 2002 for an estimation of those rents and how liberalisation may alter them. But, as an illustration of potential quota rents for TRQ products (as distinguished from the VPM for non-reciprocal agreements) and the potential beneficiary countries, we focus on Japan's biggest (in term of quota volume) TRQs, wheat and rice. These quota rents are calculated as the difference between the in-quota tariff rate and the out-of-quota tariff rate (which assumes that the out-of-quota rate is

binding). These quota rents are available to all countries that are able to export within the TRQ regime and are not reserved for countries in the non-reciprocal arrangements.

LDC countries did not supply any of Japan's needs of these two products. Several GSP countries, however, (China and Ukraine for wheat, China, India, Pakistan, Thailand and Vietnam for rice) participated in supplying Japan with some of its needs and the rest was provided by developed countries such as Australia, Canada, the US and some EU member countries. In 2002, Japan's wheat imports potentially provided some USD 655.5 million in quota rents, almost all of it captured by developed countries.[6] The two countries in the GSP scheme captured only USD 555 000, less than one-tenth of a per cent. Rice imports are somewhat different in that more GSP countries are engaged in exporting to Japan and the quota rents they capture are much larger than the quota rents in wheat and they represent a bigger share of total quota rents. But, it is still the case that developed countries get a much bigger share. In 2002, the potential quota rents for rice imports into Japan were USD 261.4 million. The five GSP countries captured USD 78 million (30% of the total) with the three developed countries, Australia, Italy, and the US capturing the rest (USD 183.4 million).

To put this in perspective, potential preferential receipts generated by Japan's non-reciprocal arrangements were about USD 45 million for all schemes and all countries. Japan's TRQ scheme for rice generates potential quota rents for five GSP countries of USD 78 million, about 70% larger than non-reciprocal VPM. The quota rents generated by either one of these two commodities by far dwarf the VPM generated by Japan's non-reciprocal preferential arrangements, and the bulk of the quota rents appear to be available to developed countries. The wheat and rice examples should not be compared with the Canadian VPM from its TRQ products as the calculations are different. In Canada's case, only the VPM generated through non-reciprocal preferential access were computed and not potential quota rents of the TRQ products. That is, in Canada's case, the results for the TRQ products indicate the additional VPM that preferential access provides and not the total value embedded in the TRQ regime.

United States

As mentioned above, the US data are from a different source than data for the other Quad countries and contain information on programme request by each trading partner. Thus, for the US, the data indicate the programme requested (not necessarily granted) which is a truer indication of potential preferential receipts generated (it is still the case that information on who actually gets the preferential receipts is not indicated). However, to preserve consistency with the results for the other Quad countries, the same methodology is used to generate apparent recipients, that is, it is assumed that all preference programmes are fully used. These results are presented first. However, VPM based on programme claimed are also provided since they are a better indicator, and as in Canada's case, provide an indication to the extent the methodology biases the results.

For the US, as for the other Quad countries, trading partners were grouped based on eligibility for the various non-reciprocal agreements as indicated in OECD (2005b) (reproduced in Annex II.A), (as well as a group called MFN containing countries that are not part of any non-reciprocal agreement and for the US, another group representing her NAFTA partners) for completeness. Based on these aggregate groups, where did the various products come from?

With an average of a little more than USD 33 billion per year, MFN and NAFTA countries supplied almost three-quarters of the agricultural products imported by the US (Table II.8). With an average of about USD 6.7 billion per year, countries in the GSP group provided another 15% of imports, leaving about 11% to be supplied by the countries in the other non-reciprocal agreements. Countries in the AGOA scheme supplied an average of USD 0.5 billion per year, about 1% of total imports, while countries in the LDC scheme provided around USD 20 million per year, less than half of one per cent.

Table II.8. Duty-free and dutiable imports by preferential scheme: United States 2001 - 2003

	2001	2002	2003	Average
	Million USD			
Duty Free				
GSP	3 000	3 200	3 600	3 200
LDC	18	8	18	18
AGOA	200	300	400	300
ATPA	900	1 000	1 000	1 000
CBERA	1 300	1 200	1 300	1 200
MFN	4 700	5 700	7 300	5 900
NAFTA	6 200	7 000	6 400	6 600
Total Duty free	**16 318**	**18 408**	**20 018**	**18 218**
Dutiable				
GSP	2 800	3 500	4 100	3 500
LDC	2	2	2	2
AGOA	200	200	200	200
ATPA	700	700	900	800
CBERA	1 300	1 500	1 600	1 500
MFN	9 900	11 200	11 700	10 900
NAFTA	8 700	9 900	11 300	9 900
Total Dutiable	**23 602**	**27 002**	**29 802**	**26 802**

Focusing on imports of goods facing positive MFN duties, the portion of trade with the potential to generate preferential receipts, again, most of the imports are provided by countries in the MFN or NAFTA blocks. Imports from MFN countries facing positive MFN rates averaged USD 10.9 billion (41% of dutiable imports) while those from NAFTA average USD 9.9 billion per year (37% of total). Among the non-reciprocal programmes, countries within the GSP group supply the most products facing positive MFN rates, averaging USD 3.5 billion per year (13% of total dutiable imports), while countries in the AGOA and LDC schemes average less than 1% of dutiable imports. Thus, as was the case for Canada and Japan, a relatively small share of US's agricultural imports are sourced from countries eligible to non-reciprocal preferential access restricting the scope for preferential receipts.

In contrast, based on programme actually claimed, (Annex Table II.C.6) the MFN scheme, with an average of USD 30.5 billion was by far the most dominant import scheme, representing a little more than 2/3 of imports. The NAFTA scheme, with an average of USD 11.2 billion represented another 25% of imports. Countries belonging to the non-reciprocal programmes of interest for this study provided an average of USD 3.3

billion per year (7% of the total). The largest scheme was CBERA with an average of USD 1.4 billion per year followed by the GSP scheme (which includes imports from LDC's) with an average of USD 1.2 billion per year. About USD 97 million per year entered through the AGOA scheme representing 0.2% of imports.

A major reason for the large discrepancy between imports based on country groupings versus those under programmes actually claimed for the MFN scheme is that all duty-free imports into the US (which as we have seen are sizeable) are classified as entering under the MFN scheme regardless of the source. In contrast, in our definition duty-free imports are classified by source. By the reckoning in this analysis, most of the imports when the MFN rate is zero come from NAFTA countries with an average of 36% of the total while MFN countries provide 32% of the duty free imports. GSP countries also provide a sizeable share of duty-free imports, averaging almost 18% of the total per year.

What are the major agricultural products imported by the US? When the focus is on total (dutiable and non-dutiable imports), based on the HS-2 digit level, *Beverages*, (Chapter 22) is the most important imported sector averaging USD 9.5 billion per year (21% of total) followed by *Fruits* (Chapter 8) with an average of USD 4.2 billion per year (9%) and *Meat* (Chapter 2) at USD 3.8 billion a year (8% of total). However, when focusing on dutiable imports where potential rents reside, *Beverages* (Chapter 22) is the largest import sector, averaging USD 3.8 billion per year (Annex Table II.2.7) followed by *Vegetables* (Chapter 7) with USD 3.1 billion per year and *Meats* (Chapter 2) with an average of USD 2.9 billion per year. These three sectors represent 37% of dutiable imports.

Which sectors are supplied by which group of countries? The largest dutiable sector imported from the countries in the AGOA scheme is *Fruits* (Chapter 8), averaging USD 47.6 million per year followed by *Tobacco* (Chapter 24) with an average of USD 41.9 million per year (Annex Table II.2.7). These represent only 2.4% and 4.6% respectively of US dutiable imports of these products. AGOA countries have the largest presence in the *Planting material* sector (Chapter 14), providing about 10% of US import needs, but with an average import bill of USD 6 million per year, this sector is the least important of the items shown in the table. Furthermore, there are two sectors, *Meats* (Chapter 2) and *Preparation of Meats* (Chapter 16), representing an average of import bill of USD 3.4 billion per year where AGOA countries have no presence.

Least developed countries not in the AGOA scheme (the LDC group), have an even smaller presence in the US dutiable import sector. In most sectors, these countries provide less than one-tenth of a percent and they are totally absent in six of the sectors shown in Table 13. The largest export sector for this group of countries is *Lac gums, and resins* (Chapter13) with an average of USD 430 000 per year followed by *Tobacco* (Chapter 24) with an average of USD 351 000 per year.

Countries in the other three non-reciprocal schemes under consideration are more successful exporters to the US and thus capture a larger share of the import market. Countries in the ATPA scheme are the largest providers of *Live Trees and other Plants* (Chapter 6) with an average of USD 412 million per year (39% of total). *Vegetables* (Chapter 7) are the second most exported sector for the countries in this scheme, averaging USD 112 million per year about 4% of the total import bill of this sector.

The largest export sector to the US for the countries in the CBERA scheme is *Fruits* (Chapter 8) with an average of USD 381 million per year, followed by *Tobacco*

(Chapter 24) which averages USD 286 million per year. *Fruits* (Chapter 8) are also the largest export sector for the countries in the GSP scheme, averaging some USD 679 million per year followed closely by exports of *Preparations of Vegetables and Fruits* (Chapter 20) with an average of USD 644 million per year.

The value of US's preferential access

The trade data indicate the maximum VPM that may be possible assuming that all traded products are eligible and utilisation rates are 100%. From earlier studies (OECD 2005a, 2005b) the evidence suggested that not all imported products are eligible and utilisation rates, although high, are less than 100%.

The US through its various non-reciprocal arrangements provided about USD 188 million in preferential receipts in 2001 and these increase to slightly more than USD 250 million in 2003 (Table II.9). The largest group of beneficiary countries were those belonging to the CBERA scheme. Potential preferential receipts for these countries averaged almost USD 90 million per year representing some 41% of the VPM provided by the US through its non-reciprocal programmes. Countries in the ATPA scheme were the second largest beneficiaries gaining an average of a little more than USD 63 million per year, representing 29% of the total. Countries in the LDC scheme, even though they receive substantial preferential access (among the largest margins) granted by the US, because they do not supply much produce to the US, are not able to capture significant preferential receipts. During the three year period, average VPM for this group of countries was a bit more than USD 100 000 per year.

Table II.9. The value of US preferential access: 2001 – 2003 and the value of preference margin (VPM) as a share of average imports

	2001	2002	2003	Average	Average VPM as a share of dutiable agricultural imports from eligible countries	Average VPM as a share of agricultural imports from eligible countries
	Million USD					
GSP	44.8	53.4	64.0	54.1	1.5%	0.8%
LDC	0.1	0.1	0.1	0.1	5.5%	0.5%
AGOA	9.3	13.4	13.1	11.9	6.0%	2.4%
ATPA	50.5	60.8	78.5	63.3	7.9%	3.5%
CBERA	83.2	91.6	94.6	89.8	6.0%	3.3%
Total	**188.0**	**219.3**	**250.3**	**219.2**	**3.7%**	**1.9%**

The VPM provided by the US for countries in the various schemes averaged almost 4% during the 2001 to 2003 period. Countries in the ATPA scheme are relatively more dependent on VPM than countries in the other schemes. During the three year period, preferential receipts represented about 8% of the value of their dutiable exports to the US. Countries in the other schemes, except for GSP, are also relatively dependent as VPM represent about 6% of their dutiable exports. In contrast, preferential receipts represent less than 2% of the value of dutiable exports for the countries in the GSP scheme.

The information just presented is based on the assumption of 100% utilisation. But, as stated, the US information enables us to calculate the value of preferential receipts based on the programme actually requested. Based on this information, the US provided preferential receipts valued at USD 168 million in 2001 and these increased to USD 232

million in 2003 (Table II.10). Note that although the value of preferential receipts is lower compared to the value based on our assumptions, the rank ordering is not changed. Countries in the CBERA scheme gain the biggest share of the preferential receipts, followed by countries in the ATPA[7] scheme. Countries belonging to the AGOA and especially those in the LDC scheme receive a much smaller share of the preferential receipts when computed based upon programme request. Note further that countries that are eligible for one scheme sometimes choose to use another scheme. For example, countries eligible for the CBERA scheme requested the GSP scheme instead and received an average of USD 3 million in preferential receipts per year. Similarly, countries eligible for the ATPA scheme requested the GSP scheme and collected an average of USD 6.2 million in preferential receipts per year.[8] The data suggest that for countries in the CBERA and ATPA scheme, choosing the GSP scheme did not incur penalties as the calculated VPM would have been the same had they chosen their respective schemes rather than the GSP scheme. Preferential margins were the same for the three schemes.

Table II.10. The Value of preference margin based on programme requested: United States 2001 — 2003

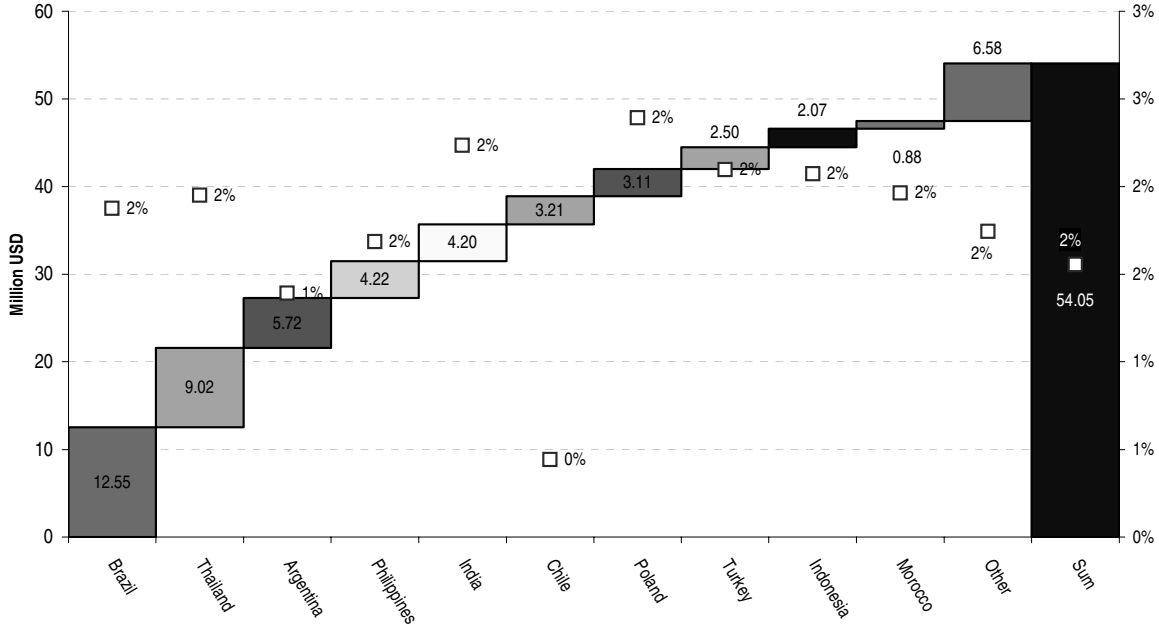
	2001	2002	2003	Average
		Million USD		
ATPA	43.1	30.4	72.8	48.8
ATPA GSP	3.2	10.3	5.2	6.2
AGOA	2.7	8.4	7.2	6.1
AGOA GSP	2.2	3.4	2.6	2.8
CBERA	80.5	89.9	87.5	86.0
CBERA GSP	2.4	1.2	5.3	3.0
GSP	33.5	40.6	51.1	41.7
LDC	0.1	0.0	0.1	0.1
Total	**167.7**	**184.3**	**231.7**	**194.6**

The data indicate that AGOA countries utilised the MFN scheme to export produce even though there were positive preferential margins for the AGOA programme. By making this choice for those goods, AGOA countries forfeited preferential receipts worth on average USD 2 million per year. Countries eligible to the other schemes also failed to collect preferential receipts by exporting though the MFN scheme even though the products were eligible for the various programmes and had positive preferential margins. Because they chose to utilise the MFN scheme, countries in the CBERA programme gave up potential VPM worth an average of USD 900 000 per year, ATPA countries gave up preferential receipts worth USD 8.3 million per year and countries in the GSP scheme gave up preferential receipts worth USD 12.3 million per year. These values however probably are inflated. As stated above, the ATPA and GSP programs expired temporarily in 2001 and were not renewed until August 2002. During this time, eligible countries could only export under the MFN program. Upon renewal, program benefits were made retroactive to the expiration dates and countries could have applied for a refund of duties paid on eligible products. The GSP figure may be further inflated because many countries have been graduated out of the program for selected products under the program's competitive need limits which provides a safeguard mechanism designed to prevent the extension of preferential access to countries that are considered competitive in the production of a product. Obviously, there is something in the way individual trading companies do business or in the procedures of the various programmes that induces

trading companies to utilise schemes that may not generate the highest VPM, and even choose programmes where potential preferential receipts are forsaken. It is beyond the purpose of this study to examine the reasons for these choices. Some of these reasons such as rules of origin and compliance cost, have already been discussed. However, the results do illustrate that our assumptions lead to an over-estimation of the potential preferential receipts that are collected and thus the cost of preference erosion if the margins are reduced or eliminated. For consistency with the results for the other Quad countries, the value of preferential access reported below is provided based on the same methodology as for the other Quad countries and not on the programmes requested.

What countries are benefiting from the various schemes? Brazil is the largest beneficiary of the GSP scheme averaging USD 12.5 million per year, followed by Thailand with an average of USD 9 million per year and Argentina with an average of USD 5.7 million per year (Figure II.7). As is the case for the other schemes, VPM are concentrated in a few countries. The top five countries in the GSP scheme captured about 66% of the VPM while the bottom 38 countries captured a little more than 2%. Countries that participate in this scheme tend to have greater diversification in their exports to the US as VPM represent a relatively minor share of their exports. As mentioned above, on average VPM represent less than 2% of the value of these countries dutiable exports to the US. Nonetheless, seven (out of the 61) have VPM which represent more than 5% of the value of their dutiable exports.

Figure II.7. Top ten beneficiaries of GSP scheme: United States average 2001 — 2003



The meagre preferential receipts for countries in the LDC scheme are also captured by relatively few countries. Many of these countries export only one or two items (at the HS-8 digit level) and the volume and value is scanty. Thus, even though they enjoy very good preferential access, they generate very little preferential receipts. In 2001 Cambodia exporting only one item (tobacco) captured preferential receipts valued at USD 86 183,

representing 58% of the total for the LDC scheme. Cambodia did not replicate this experience and in 2002 and 2003, Bangladesh received most of the preferential receipts. During the three year period, Bangladesh was the largest beneficiary with VPM valued at USD 44 683 per year (41% of total) (Figure II.8). The top five recipients captured 88% of the total. Even though the VPM are meagre, for some countries they represent a relatively large share of their dutiable exports to the US, suggesting over reliance on preferential access for their exports. Chief among the reliant countries is Cambodia with preferential receipts representing 31% of her dutiable exports to the US, followed by Gambia with about a 10% share. There are another five LDCs where VPM represent at least 5% of the value of their dutiable exports to the US.

There are only four countries in the ATPA scheme, but even in this case, most of the preferential receipts are captured by one country. Colombia, with an average of USD 34.1 million per year captures 54% of total preferential receipts while Bolivia, with an average of USD 272 000 per year, captures less than one percent (Figure II.9).

For the ATPA countries, the VPM represent a sizeable share of their dutiable exports to the US. Peru, the country with average VPM of USD 18.9 million per year, the VPM represent 11% of the value of dutiable exports to the US, while they represent 8% for Colombia. For each of the other two ATPA members, VPM as a share of exports are 6% indicating a relatively high dependency on preferential trade.

Figure II.8. Top ten beneficiaries of US LDC scheme: United States average 2001 — 2003

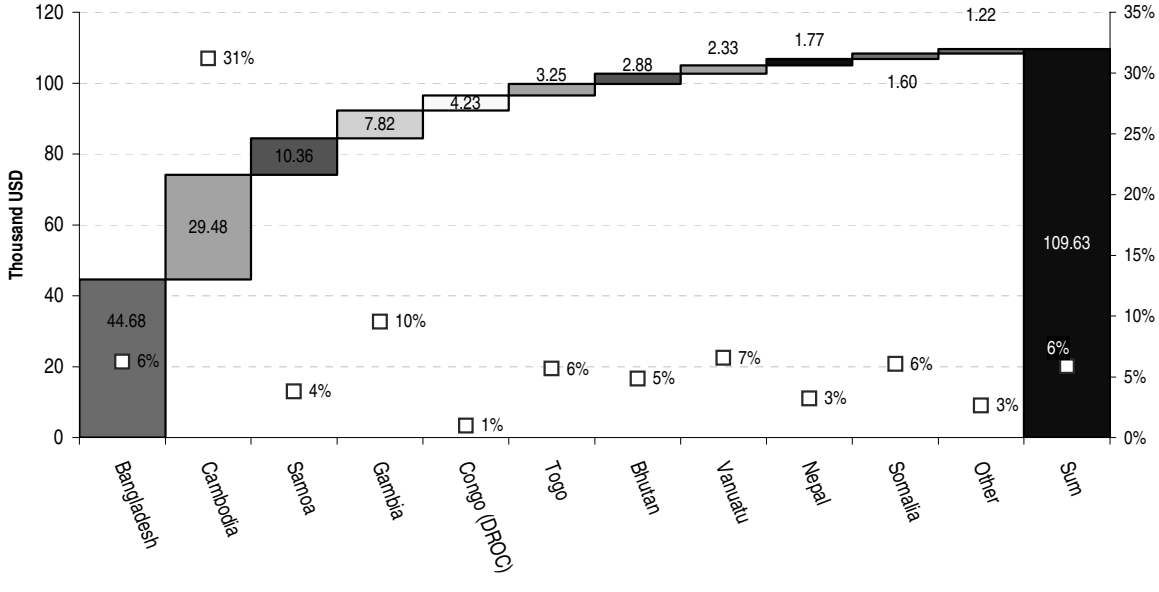
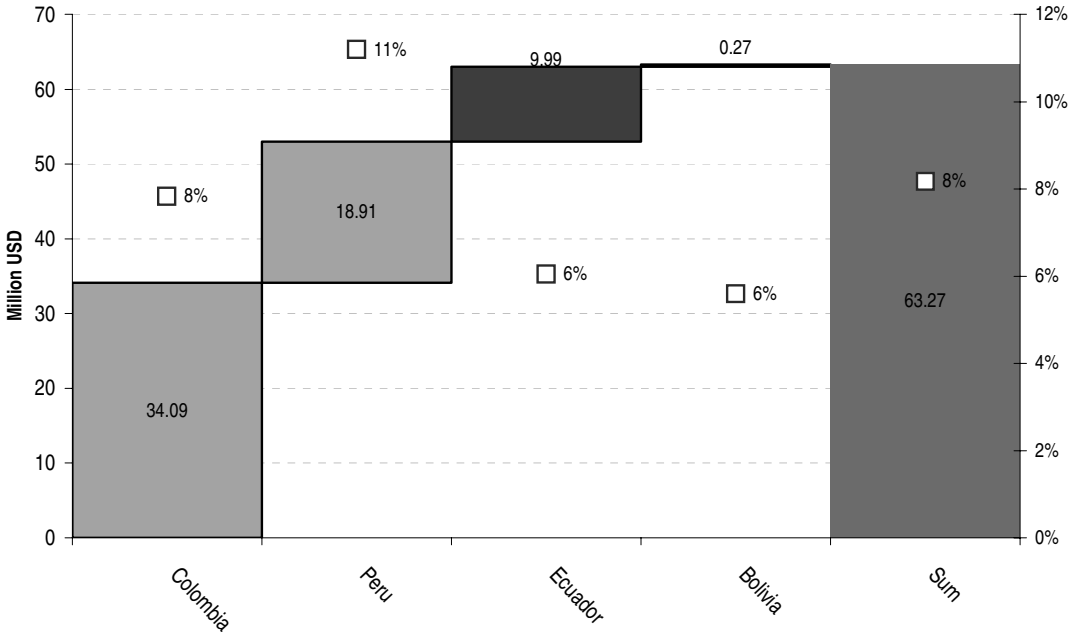


Figure II.9. Average value of preference margin for the ATPA scheme: United States average 2001 — 2003



The CBERA scheme generates the most VPM and although the country with the most preferential receipts does not dominate to the same extent as the top country of the other programmes, it's still the case that most VPM are captured by only a small number of countries. Costa Rica and Guatemala traded places on top during the three year period. On average, Costa Rica with an average of USD 23.2 million per year edged Guatemala's average of USD 22.1 million per year (Figure II.10). These two countries captured a little more than half the VPM in this scheme during this time, while the top five countries captured 86% of the total. In contrast, the bottom 12 countries captured a little more than 2% of the total.

In terms of relying on preferential access, the leader among this group of countries is Barbados. During the three year period, the VPM for Barbados averaged of some USD 1.3 million per year. This represents some 17% of the value of dutiable exports to the US and is among the highest of the various countries in the different schemes. Other CBERA members such as Guatemala (10%) and Honduras (8%) are also relatively reliant on the preferential scheme as are the Netherlands Antilles (10%) and Antigua Barbuda (8%) which are not shown on the figure. Overall, for 14 of the 22 countries in this scheme, VPM represent more than 5% of the value of their dutiable exports to the US.

In the AGOA scheme, two countries, South Africa with average VPM of USD 6.4 million per year and Malawi with an average of USD 3.6 million per year capture the lion's share of the VPM (84% of total), leaving only USD 1.9 million per year for the other 25 countries in the AGOA scheme (Figure II.11). The degree of concentration is illustrated by the fact that the next three top earners of rents, Swaziland, Mozambique, and Mauritius capture another 8% of the VPM, while the bottom 18 countries capture 3% of AGOA preferential receipts annually.

Figure II.10. Top ten beneficiaries of CBERA scheme: United States
Average 2001 — 2003

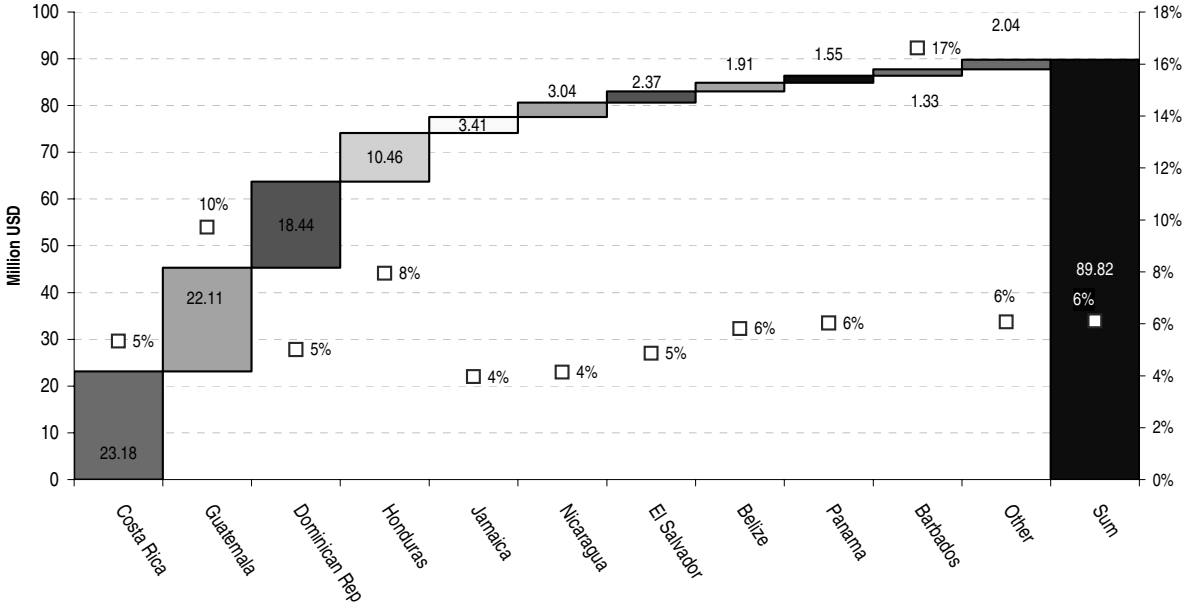
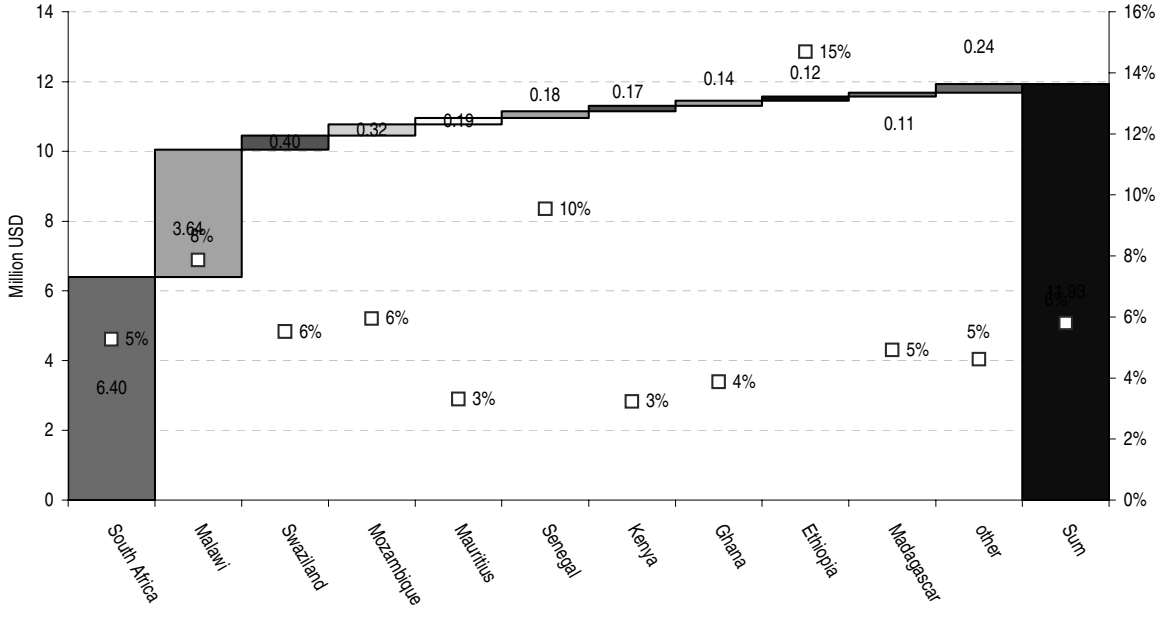


Figure II.11. Top ten beneficiaries of US AGOA scheme
Average 2001 — 2003



Although annual preferential receipts are not very high and most are captured by only a few countries, the VPM as a share of dutiable exports to the US are more than 5% for 14 AGOA countries. For Ethiopia, annual preferential receipts of USD 120 000 per year represent 15% of the value of dutiable exports to the US, while in the case of Senegal, annual preferential receipts of USD 182 000 represent almost 10% of that country's dutiable exports. Even for South Africa and Malawi, the two largest beneficiaries, preferential receipts represent an average of 5% and 8% of the value of their dutiable exports to the US, respectively. This relatively high concentration of VPM in trade suggests that these countries are relatively specialised in the export of products where preferences are important and may have to undertake larger adjustments when preferences are reduced.

What are the sectors that are generating the VPM? Table II.11 reports the three year average VPM for the various sectors (based on HS-2 aggregation) for the different regimes. *Fruits* (Chapter 8) with an average of USD 48 million a year is the leading sector, followed by *Sugar* (Chapter 17) with an average of USD 34 million and *Tobacco* (Chapter 24) with an average of USD 30 million. These three sectors represent more than 50% of the preferential receipts.

Table II.11. Average value of preference margin by sector: United States average 2001 — 2003

	GSP	GSP LDC	AGOA	ATPA	CBERA	Total
			Thousand USD			
Chapter 08 Edible fruit, nuts, peel of citrus fruit, melons	4 875	3	2 936	5 051	35 135	48 000
Chapter 17 Sugars and sugar confectionery	15 912	1	2 031	4 353	12 086	34 382
Chapter 24 Tobacco and manufactured tobacco substitutes	1 423	51	3 718	11 963	13 178	30 333
Chapter 06 Live trees, plants, bulbs, roots, cut flowers etc	604	2	207	24 720	2 934	28 467
Chapter 07 Edible vegetables and certain roots and tubers	2 690	5	251	12 974	10 068	25 988
Chapter 20 Vegetable, fruit, nut, etc food preparations	7 156	7	1 012	2 708	6 498	17 380
Chapter 21 Miscellaneous edible preparations	6 082	1	164	208	2 862	9 317
Chapter 22 Beverages, spirits and vinegar	1 917	0	889	92	4 310	7 209
OTHER	3 583	8	156	149	59	3 955
Chapter 16 Meat, fish and seafood food preparations nes	2 806			0	1	2 807
Chapter 19 Cereal, flour, starch, milk preparations and products	1 884	3	12	390	355	2 645
Chapter 18 Cocoa and cocoa preparations	1 964		19	188	46	2 217
Chapter 15 Animal,vegetable fats and oils, cleavage products, etc	733	0	235	111	405	1 484
Chapter 09 Coffee, tea, mate and spices	1 059	0	43	140	35	1 277
Chapter 02 Meat and edible meat offal	0			1	1 069	1 070
Chapter 11 Milling products, malt, starches, inulin, wheat gluten	689	8	19	116	11	843
Chapter 04 Dairy products, eggs, honey, edible animal product nes	198	0	5	78	423	704
Chapter 12 Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	77	8	110	8	242	444
Chapter 13 Lac, gums, resins, vegetable saps and extracts nes	206	4	3	4	65	282
Chapter 14 Vegetable plaiting materials, vegetable products nes	14		116	0	0	130
Chapter 23 Residues, wastes of food industry, animal fodder	97		1	0	0	99
Chapter 10 Cereals	68	8	2	16	2	95
Chapter 05 Products of animal origin, nes	17		1	0	31	49
Chapter 01 Live animals	2	0	4	0	0	6
Header 52 - Cotton.	0	0	0		1	1
Total	**54 055**	**110**	**11 933**	**63 272**	**89 817**	**219 187**

Agricultural products other than cotton located in chapters above Chapter 24

Looking at the individual schemes, two sectors *Fruits* (Chapter 8) and *Tobacco* (Chapter 24) alternate generating the largest VPM for the countries in the AGOA scheme. During the three year period, *Tobacco* with an average of USD 3.7 million per year (31% of total), *Fruits* averaging USD 2.9 million per year (25% of total), and *Sugar and Confectionary* (Chapter 17) with an average of USD 2 million per year (17% of total) are the most important sectors representing 73% of total VPM. In terms of less aggregate

product definitions, after tobacco, sugar with an average of USD 2 million per year, grapes, with an average VPM of USD 1.6 million per year (provided solely by South Africa), and citrus (provided solely by South Africa) at USD 970 000 per year are also important generators of preferential receipts. The VPM generated by exporting tobacco and sugar are a result of preferential access within the quota for these two TRQ products. TRQ products and preferential receipts are further discussed below.

For the countries in the ATPA scheme, the sectors generating the most preferential receipts is *Live Trees and other Plants* (Chapter 6) producing VPM worth USD 24.7 million per annum (39% of total), *Vegetables* (Chapter 7) with USD 13 million per year (21%), and *Tobacco* (Chapter 24) producing an average of USD 12 million per year (19%). In terms of more disaggregate product definition, in addition to tobacco, sugar USD 3.4 million per year, figs and pineapples USD 2.3 million, grapes, with an average of USD 2.1 million, and onions USD 2.5 million, are important contributors to preferential receipts. For these countries, much of the VPM from sugar and tobacco are through exporting within the quota.

For the CBERA countries, *Fruits* (Chapter 8) with an average of USD 35.1 million per year, *Tobacco* (Chapter 24) averaging some USD 13 million per year and *Sugar and Confectionary* (Chapter 17) with USD 12.1 million per year in preferential receipts, are the three most important sectors. Among the more disaggregated products, melons are the single largest contributor to preferential receipts generating almost USD 30 million a year. Note that for this scheme, as in the two previous ones, two TRQ products, tobacco and sugar feature prominently among the products that are generating large preferential receipts.

For countries in the GSP scheme, the largest sector generating VPM for the countries in this scheme is *Sugar and Confectionary* (Chapter 17) with average VPM of almost USD 16 million per year (29% of total), more than double the next largest sector *Preparations of Fruit and Vegetables* (Chapter 20) with an average of USD 7.2 million per year. The third largest sector with an average of USD 6.1 million per year is *Miscellaneous Edible Preparations* (Chapter 21). These three sectors generate almost 54% of total preferential receipts. In terms of more disaggregate product definition, sugar imports generate preferential receipts averaging USD 9.5 million per year confectionary products generate some USD 6.0 million of VPM a year, and figs and pineapples with an average of USD 2.2 million per year provide substantial preferential receipts. As is the case for the other regimes, most of the VPM generated by sugar imports are within the TRQ.

As for the other Quad countries, TRQs are a part of the import regime for the US. As discussed above, some TRQs, notably sugar and tobacco, generate substantial VPM, although most of the preferential receipts are provided through trade in products without TRQs. Nevertheless, it may be instructive to examine the role of the TRQ regime in generating preferential receipts since TRQs can be controversial. As explained above, the US does not provide preferential margins on the out-of-quota tariff rates of TRQ products. But, since trade at those rates is almost non-existent, this is not very relevant. The US does provide preferential access on TRQ products within the quota however. As explained before, preferential receipts within the quota are calculated as the difference between the preferential rate and the in-quota MFN rate. As illustrated above, this calculation might under-estimate the VPM that can be obtained for TRQ products if the MFN in-quota rate is not the appropriate rate (for example when either the quota or the out-of-quota tariff rate is binding).

Preferential receipts for exports within the TRQ regime represent about 12% of total VPM. In 2001, exporting within the TRQ regime generated USD 25.8 million in preferential receipts for those countries that were able to export within the system. Preferential receipts, concomitant with increased trade, expanded to USD 28.4 million in 2003 (captured mostly by countries in the CBERA and GSP schemes). Although the VPM within the TRQ regime are a small share of overall VPM, for countries in the AGOA scheme, these preferential receipts amount to an average of USD 3.9 million per year and represent about 33% of all their VPM. Since export volumes are limited by the quota, preference erosion for these products may create more severe adjustment problems as the possibility of compensating for erosion by expanding exports to reduce rent loss may not be possible unless the quotas are enlarged.

As illustrated for Japan, additional quota rents to the preferential receipts calculated above may exist for TRQ products. Those additional quota rents are a result of the TRQ regime and not due to preferential (as used in this report) access *per se*. If those quota rents exist, countries that export under the MFN regime can also capture them. Consequently, they are not part of the mandate of this study and are not computed. To illustrate the order of magnitude between preferential receipts provided through the non-reciprocal trading arrangements and potential quota rents generated by the TRQ regime, quota rents for sugar and tobacco were also calculated. As in the case for Japan, these quota rents are calculated as the difference between the in-quota tariff rate and the out-of-quota tariff rate.[9] These quota rents are available to all the countries that are able to export within the regime and are not reserved for countries in the non-reciprocal arrangements. However, countries within the various preferential schemes may get an additional boost to their quota rents when the preferential in-quota rate for them is lower than the MFN rate.

The results indicate that the quota rents generated by the tobacco TRQ grew from USD 837 million in 2001 to USD 1.2 billion in 2003 while quota rents for the sugar TRQ totalled a little more than USD 500 million each year. As in the case for Japan, the results show that the quota rents for just these two products completely swamp the value of preferential access provided for all regimes for all products. But, unlike the case for Japan, developing countries have the potential to capture a large share of these quota rents. In the case of sugar, The Dominican Republic is potentially the largest beneficiary with an average quota rent of USD 80 million per year (16% of total), followed by Brazil with an average of USD 62 million per year (12%) and the Philippines averaging USD 48 million per year (10%). In the case of the tobacco TRQ, it is once again the case that developing countries have the potential to capture a large share of the quota rent. In this case, however, the quota rents are much more concentrated for one country, Brazil. For Brazil, the tobacco TRQ has the potential to generate an average of USD 612 million a year, about 60% of the value of the tobacco quota rents. Argentina with an average of USD 86 million per year (9%) is potentially the second largest recipient followed by Thailand with USD 72 million and Malawi with USD 59 million per year.

The European Union

As for the other Quad countries, the EU's trading partners were aggregated into groups based on programme eligibility as indicated in OECD (2005a). In addition to the non-reciprocal programmes of interest, countries that do not benefit from preferential agreements were placed into the MFN group while countries with special trading arrangements with the EU were placed in a category called OTHER. This category

includes notably European countries with special trading arrangements with the EU, (some of whom have since joined the EU) and countries in the Mediterranean region under the Euro-Mediterranean agreements. Trade data for these two latter groups are provided for completeness, but the VPM for countries in the OTHER category are not computed because these arrangements are beyond the scope of the study.

Within the broad group aggregates, where did EU's imports come from? The biggest share comes from the group of countries in the GSP scheme, averaging USD 20.5 billion per year which is 36% of the total, followed by countries in OTHER group with an average of USD 13 billion per year (23% of total). As is the case for the other Quad countries, LDCs, outside the ACP scheme, are not significant contributors to EU's imports, averaging some USD 54 million per year, less than 1% of EU imports.

As indicated in Annex II.2, a substantial share of EU's imports are duty-free. As shown in Table II.12, an average of USD 3 billion of EU's imports from ACP countries, 45% of their total imports, are duty-free, while more than 50% of EU imports from countries in the EBA, LDCs not in EBA (this category represents only Myanmar) and GSP schemes are duty-free. Again, trade in these products generate normal returns for the participants, but they do not generate excess returns through preferential access. Focusing on dutiable imports, where preferential receipts may exist, the countries in the programmes of interest, on average provided almost 49% of the nearly USD 33 billion. Not surprisingly, countries in the GSP scheme were the largest providers among this group, averaging USD 9.4 billion per year, followed by countries in the ACP scheme with an average of USD 3.7 billion per year. LDCs provided an average of only USD 19.7 million per year in dutiable imports, suggesting that the scope of preferential receipts for these countries is limited.[10]

Table II.12. Duty-free and dutiable imports by preference schemes: EU 2001 – 2003

	2001	2002	2003	Average
		Million USD		
Duty Free				
GSP	10 017.14	10 754.01	12 465.29	11 078.81
EBA	26.30	33.19	31.79	30.43
LDC not EBA*	3.03	4.72	3.22	3.66
ACP	2 400.60	2 879.21	3 865.06	3 048.29
GSP Drug	1 357.42	1 263.68	1 400.05	1 340.38
MFN	4 580.22	5 132.61	5 362.21	5 025.01
OTHER	2 219.27	3 258.74	3 563.40	3 013.80
Total Duty free	**20 603.98**	**23 326.17**	**26 691.01**	**23 540.38**
Dutiable				
GSP	7 029.80	9 651.28	11 456.89	9 379.32
EBA	9.84	13.25	27.54	16.88
LDC not EBA	3.47	3.72	1.26	2.82
ACP	3 020.37	3 475.61	4 639.91	3 711.96
GSP Drug	2 434.16	2 760.34	3 431.96	2 875.49
MFN	6 301.81	6 606.85	7 766.11	6 891.59
OTHER	8 037.96	9 742.49	12 231.97	10 004.14
Total Dutiable	**26 837.41**	**32 253.53**	**39 555.64**	**32 882.19**

* Myanmar is the only one country in this group

What are the major products imported by the EU? Aggregating at the HS-2 digit level and looking at the total of dutiable and duty-free imports, *Fruits* (Chapter 8) with an average of USD 8.7 billion per year in the largest sector, followed by *Residues and Waste from the food Industry* (Chapter 23), and *Oilseeds* (Chapter 12) with an average of USD 5.8 billion per year. These three sectors represent 36% of total EU agricultural imports.

When the focus is on dutiable imports only (Annex Table II.2.9), *Fruits* (Chapter 8) with an average of USD 8.1 billion per year, is the largest sector facing positive MFN tariff rates, suggesting that a very small share of products in this aggregate group enter the EU duty-free. Three other sectors, *Beverages* (Chapter 22), *Meat* (Chapter 2), each with average imports of USD 2.9 billion per year, and *Preparations of Vegetables and Fruit* (Chapter 20) with imports averaging USD 2.7 billion a year, account for more than half of the dutiable imports.

In terms of individual preferential schemes, Annex Table II.2.9 shows where countries exporting under the EBA arrangement may be able to gain preferential receipts. It appears from this table that the EU imports relatively small amounts from these countries which implies that they have a very small presence in the EU. Their largest export is *Vegetables* (Chapter 7) providing EU customers an average of USD 10 million a year, which is less than 1% of EU's vegetable imports. There are three other sectors where EU imports from this group of countries averaged more than USD 1 million a year, *Sugar and Confectionary* (Chapter 17), *Tobacco* (Chapter 24), and *Cereals* (Chapter 10), illustrating that these countries presence in EU markets is just too small to generate big preferential receipts even if they receive very large preferential margins. The European Commission (2006), looking at EU import data over a somewhat longer time horizon (2001-2005), concluded that LDC exports did not materially increase as a result of the EBA suggesting that large preferential margins have not yet had the desired effect of expanding exports from the LDCs. Nonetheless, from the perspective of the beneficiaries, these may represent an important share of their export market as discussed below.

For the countries in the GSP-Drugs scheme, *Fruits* (Chapter 8), with an average of USD 1.8 billion per year, 23% of EU's dutiable imports in this sector, is their largest market, followed by *Live trees and other plants* (Chapter 6) with an average of USD 331 million per year. The ACP countries seem to specialize in the exportation of *Sugar and confectionary* (Chapter 17), supplying an average of USD 818 million per year, 55% of EU dutiable imports of this sector. Other sectors where ACP countries have a strong presence are *Fruits* (Chapter 8) with an average of USD 638 million per year, and *Cocoa* (Chapter 18) with an average of USD 462 million per year. Countries in the GSP scheme tend to have a more diversified dutiable export profile. *Fruits*, with an average of USD 1.5 billion per year is the largest sector, but *Animal and vegetable fats* (Chapter 15) with USD 1.4 billion per year, *Meat* (Chapter 2) and *Preparations of vegetables and fruit* (Chapter 20), each with USD 1.2 billion per year, and *Cereals* (Chapter 10) with just over a billion per year are also important sectors representing a large share of EU's imports of these products.

The data in Annex Table II.9 suggest that countries in the various schemes do not tend to compete in many sectors (at the HS-2 digit level). With a few notable exceptions (Chapters 6, 7, 8, 22, 24), the EU seems to source its various import needs through specific preferential programmes with each of these programmes supplying the bulk of dutiable imports to different sectors. However, the different aspects of looking at EU's trade data provide an indication of the relative magnitude of preferential receipts that are

possible. Dutiable exports provide an indication of the magnitude of preferential receipts that are possible based on the assumption of 100% utilisation and no exclusions. The potential preferential receipts for the EU's agricultural markets are calculated below.

The Value of EU's Preferential Access

The EU's non-reciprocal programmes included in this study generated more than USD 900 million in preferential receipts in 2001 and these increased to USD 1.1 billion in 2003 (Table II.13). By far, the programme generating the most VPM is the ACP scheme, which in 2001 provided USD 659 million in VPM to the ACP countries, increasing to USD 915 million in 2003. The ACP scheme accounted for 67% of the VPM provided by the EU during the three year period 2001 to 2003. Preferential receipts for countries in the GSP scheme totalled an average of USD 288 million per year, representing 24% of the total, while countries in the GSP-DRUGS scheme captured another USD 117 million or 6% of the total. LDC countries in the EBA scheme captured an average of USD 3 million per year which is less than half of one per cent of the total[11].

As was the case for the other Quad countries, LDCs exports to the EU are miniscule, leading to miniscule preferential receipts. As the data in the table indicates, however, the EBA scheme generated VPM of more than USD 6 million in 2003, an almost three-fold increase over 2002 and about five times larger than in 2001. Preferential receipts for the EBA scheme grew faster than the VPM in any other scheme during this period. Perhaps this is an indication that LDCs are learning to use the programme which was started in 2001.

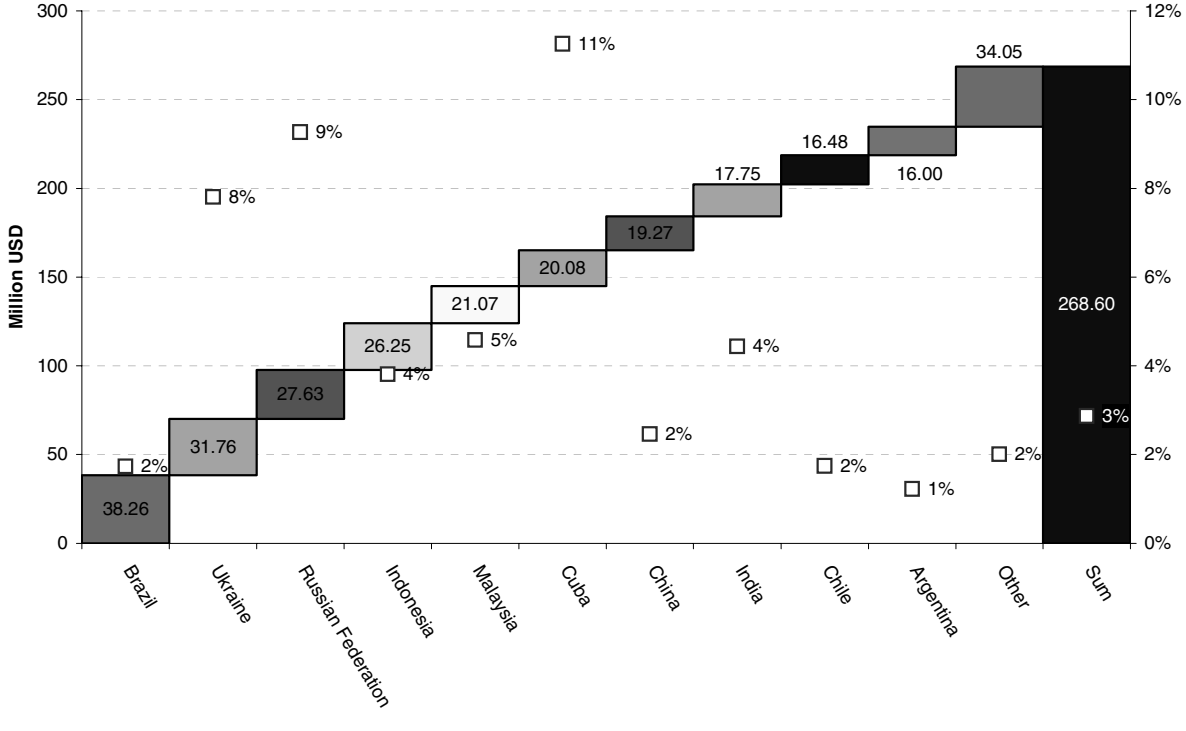
How important are the VPM provided by the EU for countries in the various schemes? Alternatively, what is the concentration of exports in products that are generating preferential receipts? Examining the data from Tables II.12 and II.13, countries in the ACP scheme seem to concentrate their dutiable exports on products that generate preferential receipts. That is the ratio of the VPM to their dutiable exports to the EU is high (especially compared to similar ratios for other schemes within the EU and for the other Quad countries), but declining. In 2001, the VPM represented 22% of the value of dutiable exports, while by 2003 they fell to 20%. Over the three year period, the VPM on average represented more than 20% of the value of dutiable exports or 11% of the value of all EU's agricultural imports from these countries. Countries in the EBA scheme also have a relatively high ratio of VPM to their dutiable exports to the EU, and it has been increasing from 12% in 2001 to 23% in 2003. VPM for the EBA countries as a share of EU's total imports from these countries averaged only 7% since most of trade from these countries face MFN tariffs of zero percent. Preferential receipts as a share of the value of EU's dutiable imports from the countries in the GSP and GSP-DRUGS schemes are much lower and of an order of magnitude similar to those found in the other Quad countries.

Table II.13. The value of preferential access: EU 2001 – 2002 and the value of preference margin (VPM)as a share of average imports

	2001	2002	2003	Average	Average VPM as a share of dutiable agricultural imports from eligible countries	Average VPM as a share of agricultural imports from eligible countries
	Million USD					
GSP	189.08	328.60	288.10	268.60	2.9%	1.3%
EBA	1.20	2.25	6.24	3.23	19.1%	6.8%
ACP	659.34	723.94	914.81	766.03	20.6%	11.3%
GSP Drug	84.12	100.29	123.42	102.61	3.6%	2.4%
Total	**933.75**	**1 155.09**	**1 332.57**	**1 140.47**	7.1%	3.6%

Which countries are benefiting from the various schemes? Among GSP-only countries, Brazil was the leading recipient in 2001 and again in 2003 with VPM worth USD 27.4 million and USD 49.6 million, respectively. Ukraine was the leading beneficiary in 2002 with USD 65 million in preferential receipts. During the three year period 2001 to 2003, Brazil, with an average of USD 38.3 million in VPM was the leading beneficiary, followed by Ukraine with an average of USD 31.8 million per year and Russia with an average of USD 27.6 million per year (Figure II.12). These three countries captured 36% of the VPM generated by the GSP scheme. Although the VPM is more widely distributed, it is still the case that preferential receipts are concentrated in a relatively few countries. The top ten beneficiaries of this regime captured 87% of the VPM while the last 27 participants captured only half of one per cent.

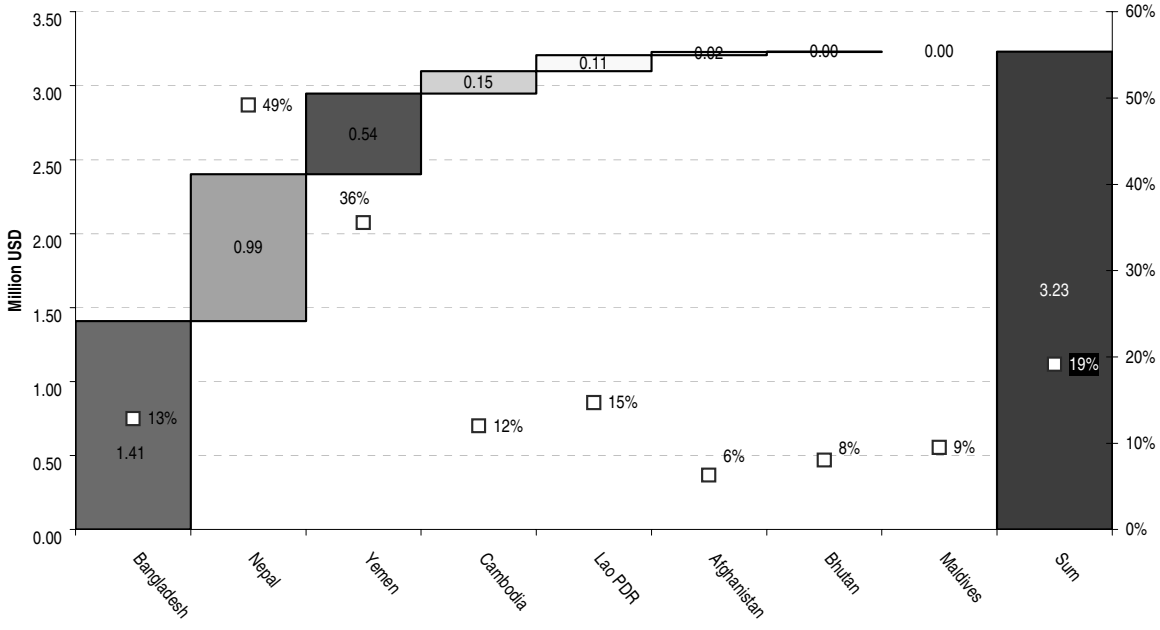
Figure II.12. The top ten beneficiaries of GSP scheme: European Union average 2001 - 2003



Most of the countries in this scheme are not very dependent on agricultural preferential trade as the VPM to dutiable exports is relatively low in general. There are countries within the scheme that are relatively dependent on exports in sectors with high preferences. Among the top ten recipients, Cuba, with an average VPM of USD 20.1 million per year, is the country most dependent on preferential trade as the ratio of her preferential receipts to dutiable exports to the EU is 11%. Dependence ratios for Ukraine and the Russian Federation are also relatively high, (8% and 9% respectively) as are those for Kazakhstan and Gibraltar (not shown in the figure) with ratios of 12% and 9% respectively. Overall, only these five countries out of the 46 eligible for the programme have a ratio of VPM to dutiable exports that are greater than 5%.

Among the EBA countries, Bangladesh was the largest recipient in 2001 capturing USD 1 million which was 85% of the total. Yemen was the leading beneficiary country in 2002 capturing almost USD 1.1 million (48% of total), while Nepal was the leading beneficiary in 2003 with almost USD 3 million 47% of the total. The evidence indicates that VPM are concentrated in a few countries. During the three year period 2001 to 2003, Bangladesh, Nepal, and Yemen on average, captured 91% of potential EBA VPM (Figure II.13). Nepal and Yemen also seem to be very dependent on exports of products generating preferential receipts. In Nepal's case, average VPM represent almost half of the country's dutiable exports to the EU, while for Yemen the VPM represents 36% of the value of dutiable exports.

Figure II.13. Top beneficiaries of the EBA scheme: European Union average 2001 — 2003

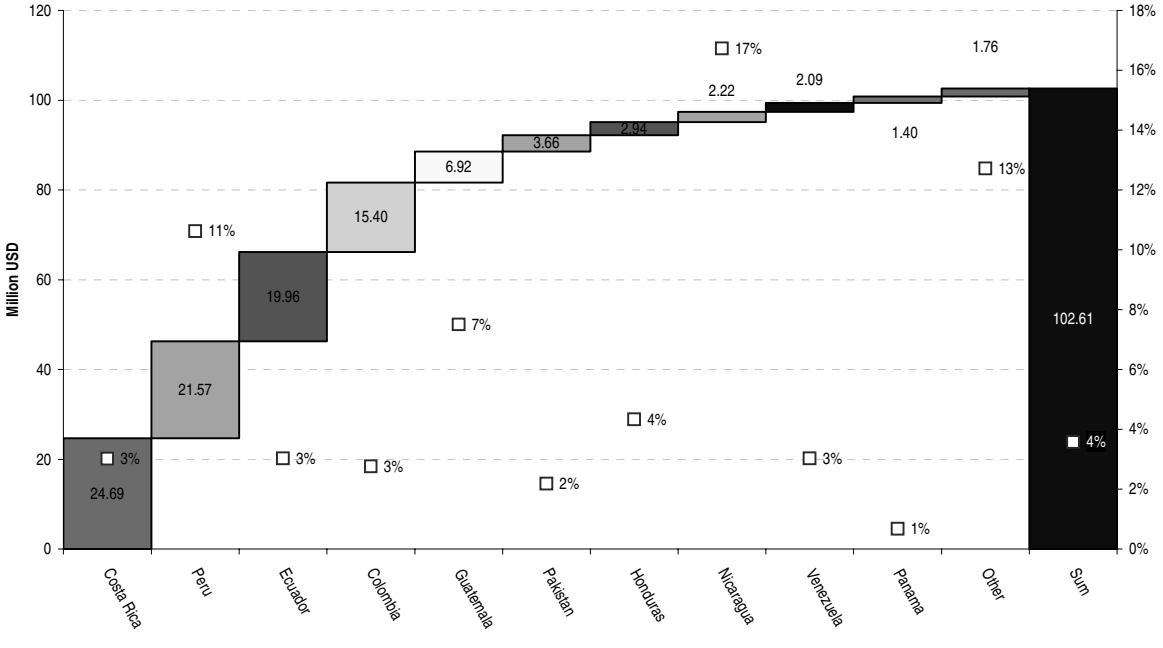


Nepal's case in this respect is very interesting. In 2001, Nepal generated preferential receipts worth about USD 8 000 from more than USD 97 000 in dutiable exports mostly from one item in *Live trees and other plants* (Chapter 6) and two items in Chapter 21 (*Miscellaneous edible preparations)*. In 2002, Nepal exported some USD 154 000 in dutiable goods to the EU, generating a little over USD 14 000 in preferential receipts, and

again, most of the exports (and preferential receipts) were from exports of items in these two chapters. In each year, the share of VPM to dutiable exports was between 8% and 9%. However, in 2003 Nepal continued exporting a similar set of products, while also taking advantage of the opening of EU's sugar market to EBA countries and exported USD 5.8 million of goods to the EU, gaining VPM valued at USD 3 million, more than half the value of Nepal's dutiable exports. The reason is that sugar exports totalled USD 5.3 million which generated USD 2.9 million in preferential receipts. This illustrates that the EBA programme may be having the desirable effect of encouraging LDCs to enter EU markets. LDCs, like Nepal, need to be careful not to rely too heavily on producing goods with high current preferential margins as changes in EU's domestic markets and potential preference erosion may pose problems.

In the GSP-DRUGS scheme, VPM are somewhat more dispersed among the participating countries. Over the three year period, Costa Rica with average VPM of USD 24.7 million per year was the largest beneficiary followed by Peru with an average of USD 21.6 million and Ecuador with an average of USD 20 million (Figure II.14). These three countries captured almost 65% of the VPM. Although for Costa Rica and Ecuador preferential receipts as a share of dutiable exports as shown above is rather low, some countries are more dependent. Nicaragua's VPM of USD 2.2 million per year represent some 17% of dutiable exports to the EU, as does Bolivia's annual VPM of USD 1.3 million. Peru is another country with double digit dependence as the VPM represents 11% of the value of dutiable exports to the EU.

Figure II.14. The top ten beneficiaries of GSP-DRUGS scheme: European Union average 2001 — 2003

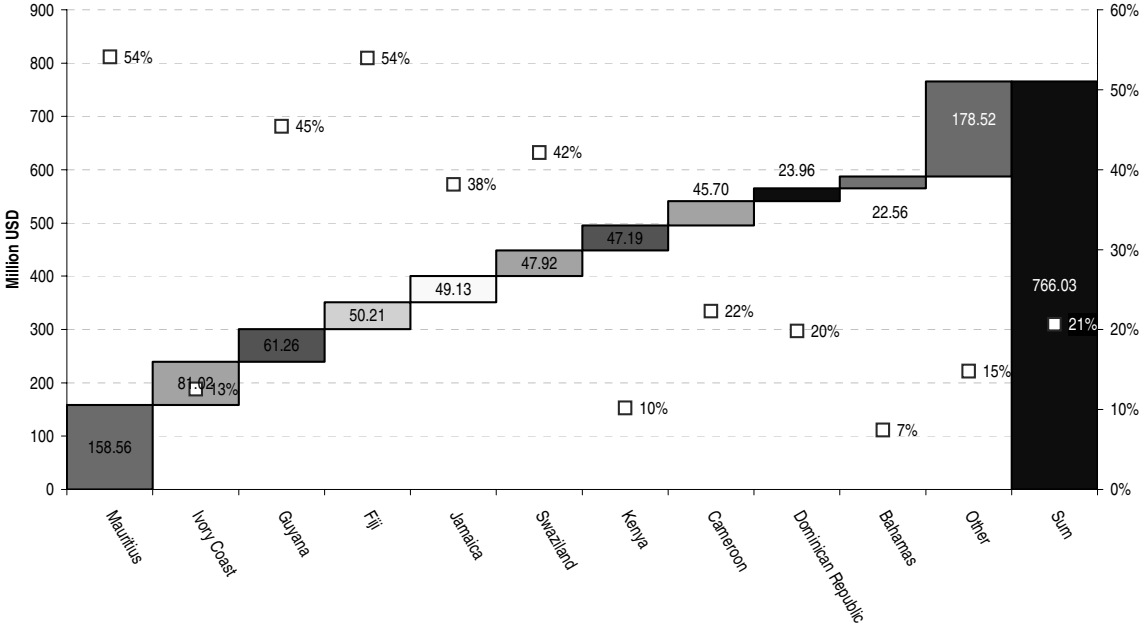


As indicated, the ACP scheme generates the vast majority of the preferential receipts provided by the EU. As is the case for the other schemes, most of the VPM is captured by a relatively small number of participants. Mauritius was the leading beneficiary, averaging some USD 158.6 million per year, followed by the Ivory Coast, with USD 81

million per year and Guyana with an average of USD 61.3 million per year. These three countries captured 39% of the VPM provided by the scheme. The top ten participants garnered almost 77% of the VPM while the last 51 participants captured 7% (Figure II.15).

Also as indicated, preferential receipts are a significant share of the value of dutiable exports for a large number of ACP countries. The share of VPM in the value of dutiable exports is more than 50% in the case of four countries, whose exports are largely dominated by sugar. Mauritius, the leading beneficiary, Fiji (average VPM of USD 50.2 million) and St. Kitts and Nevis (average VPM of USD 5.4 million), are the most dependent with the VPM representing 54% of the value of dutiable imports. Trinidad and Tobago with average VPM of more than USD 14 million per year is another country with VPM more than 50% of the value of dutiable exports. There are an additional six countries with preferential receipts worth more than 30% of the value of their dutiable exports to the EU. For the Republic of Congo average VPM of USD 2.9 million a year represent 47% of dutiable exports to the EU while Guyana's more than USD 61 million in VPM represents 45% of dutiable exports to the EU. For another 21 countries, the VPM represented at least 10% of the value of EU's dutiable imports from those countries. Clearly, there are a large number of countries within this scheme that rely on exporting preferential products and preference erosion may pose problems.

Figure II.15. The top ten beneficiaries of ACP scheme: European Union average 2001 — 2003



What are the sectors generating the preferential receipts? Perhaps it is not surprising that *Sugar and Confectionary* (Chapter 17) is the leading sector generating an average of a little more than USD 462 million per year, representing about 41% of the total (Table II.14). It is also not surprising that *Fruits* (Chapter 8) is the second leading sector, generating on average USD 189.2 million per year, almost 17% of the total. Preferential receipts, generated by the other sectors, drop even more dramatically. The third largest sector in terms of generating preferential receipts is, *Preparations of vegetables fruits and nuts* (Chapter 20), generating an average of almost USD 82 million a year, only about 7%

of total VPM, while *Animal and Vegetable fats and oils* (Chapter 15) provide some USD 69 million in VPM a year (6% of the total).

In the EBA regime, *Vegetables* (Chapter 7) is the sector with the most VPM over the three year period, averaging USD 1.8 million per year, (56% of total). This may change in the future however. In 2003, *Sugar and confectionary* (Chapter 17) became the largest sector (VPM of USD 971 000) making it the second biggest sector over the three year period, even though the sector did not generate preferential receipts for the EBA countries in 2001 and 2002. These two sectors generated almost 86% of total VPM indicating a heavy reliance on a narrow set of export products. In terms of identifiable products, sugar was the single largest product over the three year period, even though it appeared in 2003, followed by onions, and several other vegetables.

For the countries in the GSP-DRUGS scheme, the largest sector is *Preparations of vegetables and fruit* (Chapter 20) with an average of some USD 28 million per year, followed by *Live trees* (Chapter 6) with VPM averaging almost USD 22 million a year, and *Fruits* (Chapter 8) with an average of USD 20 million a year. These three sectors represent about 68% of the VPM generated by this regime. On a more disaggregated level, dates figs and pineapples (USD 10 000 per year), tobacco (USD 6 400 per year), and melons (USD 5 700 per year) are among the top VPM generating products.

Table II.14. Average value of preference margins by sector and scheme: European Union average 2001 — 2003

	GSP	EBA	GSP Drug	ACP	Total
	Thousand USD				
Chapter 17 Sugars and sugar confectionery	20 697	971	216	440 425	462 310
Chapter 08 Edible fruit, nuts, peel of citrus fruit, melons	35 393	9	20 486	133 292	189 180
Chapter 20 Vegetable, fruit, nut, etc food preparations	37 585	116	27 686	16 273	81 660
Chapter 15 Animal,vegetable fats and oils, cleavage products, etc	56 034	9	979	11 572	68 593
Chapter 10 Cereals	56 729	0	121	11 184	68 034
Chapter 06 Live trees, plants, bulbs, roots, cut flowers etc	3 679	4	21 645	26 592	51 920
Chapter 24 Tobacco and manufactured tobacco substitutes	20 009	201	6 389	24 809	51 409
Chapter 18 Cocoa and cocoa preparations	1 763	0	1 617	39 195	42 575
Chapter 07 Edible vegetables and certain roots and tubers	7 788	1 798	8 851	20 317	38 753
Chapter 22 Beverages, spirits and vinegar	1 198	7	8 269	26 590	36 064
Chapter 21 Miscellaneous edible preparations	6 106	12	4 372	3 141	13 630
Chapter 02 Meat and edible meat offal	4 314	3	0	5 795	10 112
OTHER *	9 144	0	327	148	9 619
Chapter 09 Coffee, tea, mate and spices	2 735	43	730	5 310	8 819
Chapter 19 Cereal, flour, starch, milk preparations and products	2 562	45	77	746	3 431
Chapter 12 Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	1 104	0	67	51	1 222
Chapter 04 Dairy products, eggs, honey, edible animal product nes	113	6	722	158	999
Chapter 23 Residues, wastes of food industry, animal fodder	939	0	7	40	986
Chapter 13 Lac, gums, resins, vegetable saps and extracts nes	267	0	8	148	423
Chapter 11 Milling products, malt, starches, inulin, wheat gluten	189	4	39	68	299
Chapter 16 Meat, fish and seafood food preparations nes	63	1	1	174	239
Chapter 01 Live animals	182	0	3	2	187
Chapter 05 Products of animal origin, nes	4	0	0	0	4
Total	**268 596**	**3 230**	**102 612**	**766 030**	**1 140 469**

* Agricultural products other than cotton located in chapters above Chapter 24

In contrast, countries in the GSP scheme get most of their preferential receipts from *Cereals* (Chapter 10) with an average of USD 56.7 million a year, *Animal and vegetable fats and oils* (Chapter 15), average VPM of USD 56 million a year and *Preparations of Vegetables and Fruits* (Chapter 20) with an average of USD 37.6 million a year. The VPM for these countries are more evenly distributed across a wider range of products. The top three sectors generated 56% of total preferential receipts. On a more disaggregated level, wheat with average VPM of USD 57 000 per year, palm oil with USD 37 000 a year, and sugar with an average of USD 21 000 are among the most important products.

The sector generating the most VPM for the scheme that gets the vast majority of the preferential receipts — the ACP scheme — is *Sugar and confectionary* (Chapter 7) with more than USD 440 million a year, followed by *Fruit* Chapter 8) with VPM averaging USD 133 million per year. These two sectors account for 75% of total ACP VPM. On a more disaggregated level, sugar accounts for all of the preferential receipts in Chapter 17 while bananas account for 91% of the VPM in Chapter 8. Preferential receipts drop precipitously for other products. Given the changes that the EU is implementing in its banana and sugar policies,[12] the potential to generate comparable VPM in the future is greatly diminished even if preference erosion does not take place. Other important products are; tobacco with an average of USD 25 million per year, cocoa with average VPM of USD 21 million, cocoa butter and powder with average VPM of USD 15 million and rice with average VPM of USD 11 million a year.

As for the other Quad countries, the EU operates a TRQ regime for the importation of several products. In addition to the TRQ schedule which is notified to the WTO, the EU also operates TRQ-like regimes for certain ACP, EBA and a few GSP countries for some products. However, unlike the other Quad countries which have tariff schedules with unique tariff lines for in-quota and out-of-quota tariff rates enabling the identification of imports within and outside the quota, the EU's tariff schedule does not allow easy identification of trade within the quota from trade outside the quota as the same tariff line is used for both. Because of this, the VPM for the EU's TRQ products were calculated based on the difference between the preferential rates and the MFN out-of-quota rates. This is akin to the method used to illustrate quota rents for each of the two TRQ products in Japan and the US. The reader will recall that this generated very large quota rents, order of magnitudes greater than the VPM generated through the preferential schemes. For sugar and banana imports by the EU, a similar tendency is evident. It is widely recognised that the sugar and banana VPM during the three year period of this analysis were generated by importing within the various quotas while domestic EU prices were considerably above world prices inclusive of in-quota tariff rates. Consequently, calculating the VPM for these products as if the out-of-quota tariff rate is the binding instrument (comparable to the calculations for the quota rents illustrated for the Japanese and US TRQ products) may not greatly exaggerate the VPM for these products.

The value of preferential access for the Quad countries

What does it all mean? As stated earlier, the purpose of the paper is not to debate the merits or demerits of the preferential schemes. This has been studied extensively elsewhere. The potential preference erosion that multilateral liberalisation may entail is a contentious issue. The purpose of this paper is to compute the potential preferential receipts that the current regimes generate in order to provide an order of magnitude of the implications of preference erosion.[13] In addition, there is an attempt to identify countries and sectors (as indicated by the ratio of the VPM to their agricultural exports) that may be more susceptible than others. The assumptions underlying the analysis are predicated towards over-estimating the VPM, and thus, also over-estimating the cost of preference erosion. In the case of the EU, however, as stated above, the tariff and trade data at our disposal were not at the same HS level necessitating the aggregation of the tariff data which has implications for the calculated VPM.[14]

Table II.15 summarises the average VPM generated by each of the regimes of interest in each of the Quad countries for the 2001 to 2003 period. This table shows that average preferential receipts provided by the Quad during this time totalled USD 1.4 billion per year. The reader is reminded that this value is calculated on assumptions that purposefully err on the side of overestimation. It assumes that the cost of compliance with the programme requirements is trivial under maximum utilisation. Furthermore, it is assumed that exporting countries receive all of the VPM, not sharing them with importing agents. To place this value in perspective, average agricultural imports by the Quad countries during this time totalled USD 147 billion a year, almost USD 90 billion of which were dutiable, of which USD 29 billion were imported from countries with preferential access.

Table II.15. Average value of preference margin for each of the Quad and total (2001 – 2003)

	Canada	Japan	US	EU	Total
			In thousand USD		
GSP/GPT	23 370	44 532	54 055	268 596	390 552
LDC/ EBA	44	326	110	3 230	3 709
ACPRents				766 030	766 030
AGOA			11 933		11 933
ATPA/ GSP-drug			63 272	102 612	165 884
CBERA/CCCT	1 006		89 817		90 823
Total	24 419	44 858	219 187	1 140 469	1 428 933

How are the VPM distributed across the various agricultural sectors? A summary of the VPM provided by each of the Quad countries by sector (aggregated to the HS-2 digit level) is shown in Table II.16. This shows that Chapter 17 (*Sugar and Confectionary*) with a VPM of more than USD 500 million leads the way, followed by Chapter 8 (*Fruits*) with VPM of almost USD 240 million. These two sectors provide more than half of the total showing the relatively narrow focus of the preferences provided. The VPM in the other sectors drops significantly and the bottom 13 sectors (out of a total of 25) each provide 1% or less of the total. The table also illustrates the dominant role of the EU's schemes in each sector.

Table II.16. The value of preference margin in the Quad by sector average — 2003

	Canada	Japan	US	EU	Total
			In million USD		
Chapter 17 Sugars and sugar confectionery	10.81	0.00	34.38	462.31	507.51
Chapter 08 Edible fruit, nuts, peel of citrus fruit, melons	0.04	1.58	48.00	189.18	238.81
Chapter 20 Vegetable, fruit, nut, etc food preparations	1.12	2.60	17.38	81.66	102.76
Chapter 24 Tobacco and manufactured tobacco substitutes	1.22	0.00	30.33	51.41	82.96
Chapter 06 Live trees, plants, bulbs, roots, cut flowers etc	0.78	0.95	28.47	51.92	82.11
Chapter 15 Animal,vegetable fats and oils, cleavage products, etc	2.29	6.16	1.48	68.59	78.53
Chapter 10 Cereals	0.34	0.00	0.10	68.03	68.47
Chapter 07 Edible vegetables and certain roots and tubers	0.38	1.97	25.99	38.75	67.10
Chapter 22 Beverages, spirits and vinegar	1.00	7.97	7.21	36.06	52.25
Chapter 18 Cocoa and cocoa preparations	0.65	0.21	2.22	42.57	45.65
Chapter 21 Miscellaneous edible preparations	0.77	4.53	9.32	13.63	28.24
OTHER *	0.46	10.61	3.95	9.62	24.65
Chapter 09 Coffee, tea, mate and spices	0.34	1.55	1.28	8.82	11.98
Chapter 19 Cereal, flour, starch, milk preparations and products	2.32	3.41	2.64	3.43	11.81
Chapter 02 Meat and edible meat offal	0.01	0.00	1.07	10.11	11.19
Chapter 12 Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	0.01	1.98	0.44	1.22	3.66
Chapter 16 Meat, fish and seafood food preparations nes	0.05	0.00	2.81	0.24	3.10
Chapter 23 Residues, wastes of food industry, animal fodder	1.23	0.11	0.10	0.99	2.43
Chapter 04 Dairy products, eggs, honey, edible animal product nes	0.46	0.00	0.70	1.00	2.17
Chapter 11 Milling products, malt, starches, inulin, wheat gluten	0.12	0.00	0.84	0.30	1.26
Chapter 13 Lac, gums, resins, vegetable saps and extracts nes		0.08	0.28	0.42	0.78
Chapter 14 Vegetable plaiting materials, vegetable products nes		0.62	0.13		0.75
Chapter 05 Products of animal origin, nes	0.00	0.52	0.05	0.00	0.58
Chapter 01 Live animals	0.00		0.01	0.19	0.19
Header 52 - Cotton.	0.00		0.00		0.00
Total	24.42	44.86	219.19	1 140.47	1 428.93

* Agricultural products other than cotton located in chapters above Chapter 24

In terms of the top countries that are the potential beneficiaries of these preferential receipts, Table II.17 indicates the top 30 countries ranked in order of decreasing VPM. The top 30 countries account for USD 1.2 of the USD 1.4 billion in annual VPM (86% of the total). As is evident from the table, the top five countries account for more than USD 416 million, 29% of the total. Also evident is the dominant role the EU preferences have in determining the top beneficiaries and the relative minor role of Japan's and especially Canada's schemes. Four out of the top five countries, with more than USD 354 million in annual VPM, benefit almost exclusively from EU programmes. Of the top five, only Brazil receives meaningful preferential receipts from the other Quad countries; about 20% from the US and 12% from Canada. Of the top ten countries, the EU is not the primary source of preferential receipts for only one country, Columbia, for whom the US is the primary source. Furthermore, there are only two countries, Brazil and Thailand that receive meaningful preferential receipts (more than USD 1 million a year) from each of the Quad countries. A few others receive more than USD 1 million a year in preferential receipts from three out of the four countries, including Colombia, Peru, China, Indonesia, Guatemala, Malaysia, and Argentina.

Table II.17. Top recipients of preferential access in the Quad
Average 2001 — 2003

	EU	US	Canada	Japan	All Quad
			In thousand USD		
Mauritius	158 557.73	187.71	2.85	0.27	158 748.56
Ivory Coast	81 022.41	133.15	61.24	8.81	81 225.61
Guyana	61 260.31	450.48	125.58	0.00	61 836.37
Brazil	38 258.78	12 546.43	7 242.33	3 296.38	61 343.92
Jamaica	49 130.14	3 412.54	528.13	4.81	53 075.62
Colombia	15 398.98	34 090.71	1 102.47	687.76	51 279.92
Fiji	50 213.83	377.67	3.62	0.00	50 595.12
Costa Rica	24 686.54	23 183.52	818.23	91.16	48 779.45
Swaziland	47 916.99	403.80	0.33	0.03	48 321.15
Kenya	47 187.26	168.10	1.98	160.42	47 517.76
Cameroon	45 696.83	1.17	0.19	0.00	45 698.20
Dominican Republic	23 964.94	18 435.55	96.11	0.04	42 496.63
Peru	21 572.44	18 914.61	1 502.28	59.80	42 049.14
Thailand	13 099.04	9 020.57	1 151.35	10 806.58	34 077.54
China	19 266.39		2 164.71	11 529.74	32 960.85
Ukraine	31 762.53	64.73	30.19	17.31	31 874.76
Ecuador	19 956.02	9 994.34	373.66	79.21	30 403.22
Indonesia	26 254.22	2 070.74	403.83	1 560.59	30 289.37
Guatemala	6 919.17	22 107.04	1 187.93	52.47	30 266.61
Malaysia	21 072.95		1 121.38	7 291.35	29 485.69
Russia	27 627.37	149.75	11.07		27 788.19
Argentina	15 997.33	5 715.29	422.25	4 590.78	26 725.66
Belize	22 017.43	1 906.58	4.21	1.48	23 929.69
India	17 752.22	4 197.35	758.34	601.34	23 309.25
Bahamas, The	22 555.76	231.76	52.78		22 840.31
Cuba	20 080.69		1 039.29	0.51	21 120.50
Chile	16 475.71	3 212.93	248.62		19 937.27
Malawi	11 951.01	3 642.44	6.47	143.60	15 743.52
Zimbabwe	15 061.61	348.07	137.51	3.33	15 550.52
Trinidad and Tobago	14 197.26	899.13	126.40	0.07	15 222.85

Although direct comparisons are difficult because of data, product coverage, and other differences, the results reported here are broadly similar with findings from other studies. For example, Hoekman *et al.* (2006) calculate the value of preferences to LDCs and all developing countries by multiplying aggregate preferential margins from various sources with the value of imports for 2003. They find that the value of preferences (for all products) provided by the Quad is USD 10.3 billion, most of this provided by the EU (51%) and that the LDC's get a small share of the total (4.7%). They also find that the value of the preferential schemes for Japan and especially Canada contribute relatively little to the overall value. These results for all products are broadly consistent with the findings reported here for the agricultural sector although it appears that the EU's schemes have a more dominant role in agriculture. Francois *et al.* find that the EU's preference (for all sectors) to African LDCs are worth potentially USD 460 million a

year, while Brenton and Ikezuki find that EU's trade preferences for Sub-Sahara Africa are worth 4% of those countries exports to the EU, 1.3% of their exports to the US and 0.1% of their exports to Japan. Candau and Jean (2005), assuming 100% utilisation, find that in 2001 EU trade preferences (all products) for Sub-Sahara Africa were worth EUR 703 million (USD 787 million), while the value for all developing countries of the EU's non-reciprocal agreements totalled EUR 4.7 billion (USD 5.2 billion). In this study, the overestimation of the value of preferential access based on the assumption of 100% utilisation is also indicated as they provide results based on programmes claimed. The total value of preferential access by the EU based on programme claimed declarations is found to be EUR 3.6 billion (USD 4 billion), more than EUR 1 billion below the value based on full utilisation.

Bouët, Fontagné and Jean (2006), report the value of the quota rents associated with preferential tariff rate quotas for all goods in 2001. For the 26 countries with preferential rents worth at least 0.15% of the country's GDP (indicating susceptible countries), rents totalled USD 1.4 billion. They find that under an ambitious liberalisation scenario, rents are more than halved in many cases causing significant adjustment costs for the economies concerned. Other studies report the value of preferences under alternative erosion scenarios. The baseline value of preferential access is not provided in these studies. WTO reports that under a 40% reduction in preference margins, LDC's export revenues (all sectors) would drop by USD 530 million a year. Alexandraki and Lankes complimented this analysis by applying the same methodology to developing countries. They report that a 40% reduction in preference margins would lead to a USD 914 million annual drop in the export earnings of the most vulnerable middle-income countries (a total of 17 countries). Another recent study focusing only on agricultural products is from the WTO (Low *et al.*). The primary purpose of this study was to examine the implications of preference erosion assuming the tariff cutting formula proposed by the G-20 countries using 2003 trade data. As the other two studies, they did not focus on particular schemes but grouped the countries in their sample into two categories developing and LDC's. They report that following the tariff-cutting as proposed by the G-20, the value of preferential access for developing countries would fall by more than USD 1.1 billion.

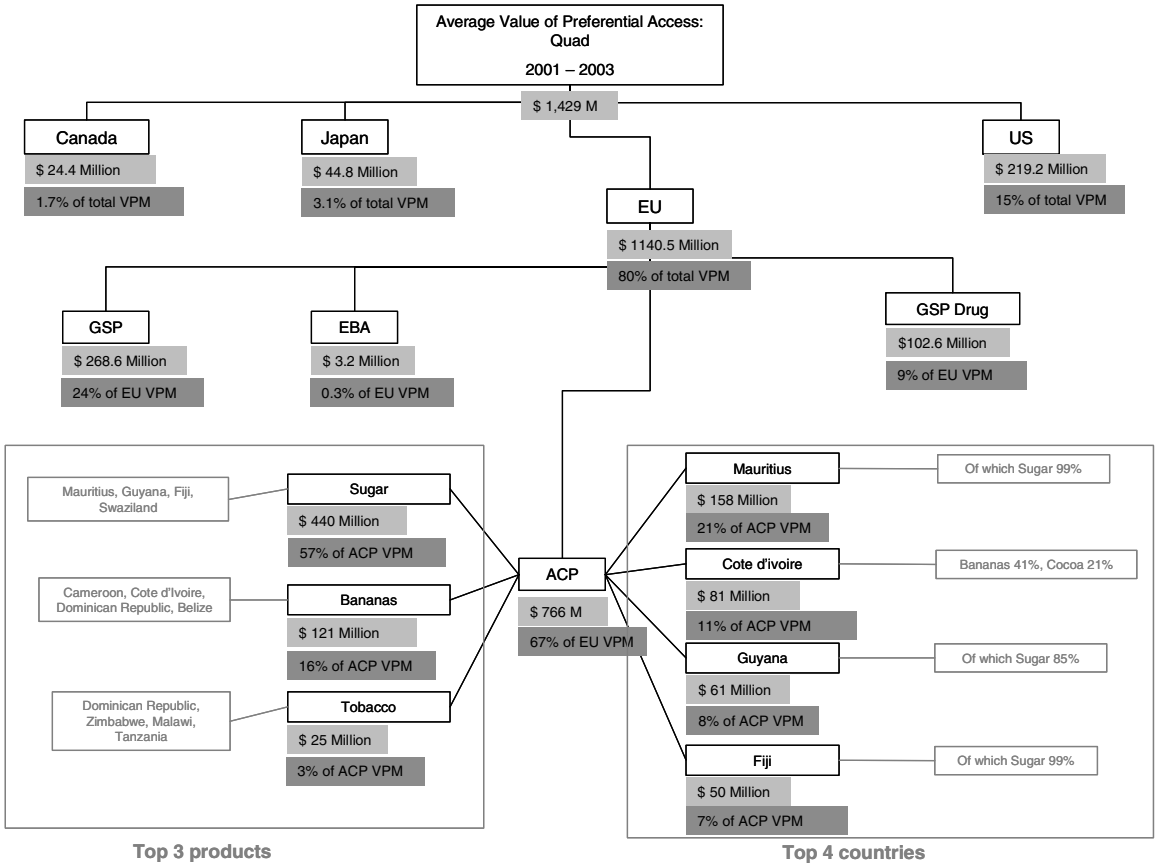
All these studies conclude that the value of preferential access is captured by a handful of countries, LDC's capture a very small share of the total, large preferences are given to only a relatively few products, and the EU is by far the largest provider. The European Commission (2006) essentially reaches a similar conclusion, that is, they find that the problem of preference erosion is limited and only an issue for a few developing countries exporting sugar, bananas, vegetables and cut flowers. The affected countries tend to be members of the ACP regime. The results reported here are consistent with the conclusion that the question of preferential access and the potentially deleterious effect of preference erosion is a particular EU issue for only a few commodities and countries. Eighty per cent of Quad country VPM is provided by the EU. Sixty-seven per cent of EU VPM is obtained by countries in the ACP scheme. The top five ACP countries capture 52% of the VPM and sugar and bananas produce about 73% of the ACP VPM. The value of these preferential receipts will fall in the future, however, regardless of the outcome of the negotiations in Geneva, as the EU reforms its domestic sugar and banana markets.

The dominant EU role in preferential access, along with the importance of the ACP scheme and how the value of this programme is concentrated on a few countries and agricultural products is illustrated in Figure II.16. The top of the figure shows the average value of the preferential access provided by the Quad countries during the 2001 to 2003 period along with the relative contribution by each of the Quad countries. From this figure, one sees that the EU provided an average of USD 1.1 billion a year which is 80% of the total provided by the Quad. Focusing on the EU schemes, the figure shows the relative contribution of each and the importance of the ACP scheme, providing an average of USD 766 million a year or 67% of EU's total. Zooming in on the ACP scheme, the figure shows two alternative ways of disaggregating the VPM provided by this programme. The split to the right shows value of preferential access obtained by each of the top four countries, the share represented, and the dominant products responsible for the VPM. The split on the left looks at the VPM from the product side. It shows the VPM generated by each of the top three products and which are the major supplying ACP countries. In general the figure shows that the top four countries captured 47% of the ACP preferential receipts by supplying the EU with sugar, bananas and cocoa. It also shows that the top three products, sugar, bananas and tobacco are responsible for 76% of the VPM captured by the ACP countries.

The question of preference erosion, has received considerable attention in the DDA discussions. The results presented here suggest that the VPM is not very high when examined within the context of dutiable agricultural imports by the Quad countries which averaged about USD 90 billion a year. Furthermore, most of it (80% of the total) is provided by the EU, and most of the value in the EU is through exports of sugar and bananas by countries in the ACP scheme. The future value of these preferences will be diminished as the ACP scheme is destined to be replaced through Economic Partnership Agreements which are being negotiated between the EU and ACP countries.

Even though preferential receipts tend to be concentrated in a few products for a few countries exporting notably to the EU, on the broad measures just presented, it may still be the case that for individual countries, even if the VPM are not large, preference erosion may be a problem as the VPM represent a sizeable share of the value of their exports or their economy. Results shown above indicate that VPM represent a relatively important share of the value of dutiable exports for many countries across the various preference schemes. The measure used in this report was rather narrow, focusing on individual Quad country imports from these countries and the VPM in dutiable imports. The next section examines the VPM for several countries that indicated high dependence from the analysis above, but look at a more general picture of their overall exports and economy and how important preferential receipts are in this context.

Figure II.16. The dominance of the EU's ACP scheme in the value of Quad preferential access and the importance of a few countries and commodities during the 2001 to 2003 period



The importance of the value of preferential margin to selected beneficiary countries

This section briefly discusses the VPM generated by the various Quad preferential schemes from the perspective of the beneficiary countries. Rather than focusing on the magnitude of the VPM or as a share of their dutiable exports to each of the Quad countries as already discussed, this section attempts to place them in a broader context of their overall economy, and export profile. The ratio of the VPM to a country's total agricultural exports provides an indication of their importance to the agricultural sector, while the ratio of the VPM to overall GDP and total merchandise exports indicates their importance to the overall economy. These ratios indicate the diversification of a country's economy and export sector relative to its agricultural sector. Where the VPM is a sizeable portion of a country's agricultural sector or exports, that country may be overly dependant on agricultural preferences. Such countries may be susceptible to large adjustments if preferences are eroded. Even in cases where the VPM represents a small share of a country's agricultural or export sectors, however, it can nevertheless provide important benefits to a particular region or commodity. Resource constraints precluded detailed examination to identify such cases, but where they exist large adjustments may

be needed. Whether or not such countries are able to adjust is beyond the scope of this study.

There are 188 countries with positive VPM in at least one Quad country. But, the importance of preferential access is not the same for all. As already mentioned, the bulk of the VPM accrues to a relatively small number of countries. As shown in Table II.17, the top 30 countries account for 86% of the total. Clearly these countries stand to lose the most when preferences are eroded.

The absolute value of preferential receipts may not be a good indicator of country's susceptibility to preference erosion as it includes countries with agricultural sectors of varying sizes and importance to their economies. Others that have examined the importance of preferences for recipients have used the ratio of the VPM to merchandise exports (Brenton and Ikezuki) or to GDP (Bouët, Fontagné and Jean). However, since this study only looks at agricultural preferences, the ratio of VPM to agricultural trade or to the value of agricultural and food production is more appropriate. However, the ratio of VPM to total merchandise exports and GDP is also included for completeness and as an indicator of the relative importance of agricultural to total trade and economy. Where the VPM, as a share of total agricultural exports is high, those countries are relatively more reliant on preferential exports for a large share of their exports and earnings.

How important are preference receiving products relative to other agricultural exports?[15] There are 34 countries where the ratio of the VPM to agricultural exports is at least 5%. These are listed in Table II.18 (Annex Table II.1.10 provides the full listing of the countries, the VPM, their agricultural and merchandise exports to the Quad, their GDP, and their agricultural value added). This list includes countries with relatively large VPM (there are 17 countries in this list that are among the top 30 countries listed in Table II.17), but also countries receiving relatively small amounts of preferential receipts. The total VPM for these 34 countries is more than USD 800 million which is 56% of the total. For 21 of these countries, the share of the VPM to agricultural exports is at least 10%. Maybe this is the list of susceptible countries? This set of countries includes some of the countries with relatively high VPM from Table II.17 such as Mauritius with VPM that is half the value of its agricultural exports and Guyana, Fiji, and Swaziland with a ratio of about 40%. The list includes countries with relatively low VPM but relatively high ratio to agricultural exports. Leading this group of countries is St. Kitts and Nevis with VPM representing 54% of the value of its agricultural exports, and it includes Barbados and Nepal with a ratio of 33%, St. Vincent and Grenadines, and St. Lucia with a 25% share. Preferences for this group seem to have a relatively important place in their agricultural exports expanding their foreign exchange earnings.

The ratio of the VPM to total merchandise exports is a broader indicator of preference reliance. Although this indicator will be understated in countries that also benefit from preferences in other sectors such as fish, textile and clothing sectors, a relatively high ratio suggests countries that predominantly export agricultural goods with preferences. Looking at the third column of Table II.18, there are several countries with relatively high ratios suggesting that agricultural exports in general and preferential exports in particular, are important to their overall export sector. For seven countries, Swaziland, Fiji, Guyana, St. Lucia, Belize, Barbados, and Mauritius, the VPM as a share of the value of their total merchandise exports to the Quad is greater than 10% suggesting the importance of agriculture to their total exports in general and preferential exports (mostly sugar) in particular. For most of the countries in Table II.18, the VPM as a share of their total merchandise exports to the Quad is less than 5%. This group of countries includes

countries with relatively large VPM such as Jamaica and Trinidad and Tobago and countries with relatively small amounts of preferential receipts such as Nepal and Cambodia. This group of countries have a diverse export sector not relying on agriculture or on agricultural preferences and the VPM as a share of their merchandise exports is very small.

Table II.18. Beneficiary countries with high dependence on Quad preferential access Average 2001 — 2003

	Value of preferential margin (VPM)	VPM as a share of agricultural exports to the Quad countries	VPM as a share of merchanise exports to the Quad countries	VPM as a share of agricultural value added (AVA)	VPM as a share of gross domestic product (GDP)
	USD 000				
St. Kitts and Nevis	5 372	54%	8%	49%	2%
Mauritius	158 749	50%	11%	50%	3%
Guyana	61 836	42%	13%	28%	9%
Fiji	50 595	39%	15%	17%	3%
Swaziland	48 321	39%	19%	25%	3%
Barbados	13 493	33%	12%	9%	1%
Nepal	998	33%	0%	0%	0%
Trinidad and Tobago	15 223	27%	0%	13%	0%
St. Vincent and the Grenadines	5 009	25%	5%	15%	1%
St. Lucia	6 949	25%	13%	17%	1%
Belize	23 930	23%	13%	16%	2%
Surinam	4 826	23%	1%	5%	1%
Dominica	2 804	21%	7%	6%	1%
Jamaica	53 076	18%	4%	11%	1%
Republic of Congo	2 892	18%	0%	2%	0%
Zambia	11 042	17%	6%	1%	0%
Bangladesh	1 459	10%	0%	0%	0%
Malawi	15 744	10%	5%	2%	1%
Mozambique	4 412	10%	1%	0%	0%
Cuba	21 120	10%	4%	1%	0%
Cameroon	45 698	10%	2%	1%	0%
Cambodia	181	9%	0%	0%	0%
Zimbabwe	15 551	8%	2%	1%	0%
The Bahamas	22 840	7%	2%	16%	0%
Dominican Republic	42 497	7%	1%	2%	0%
Tanzania	9 700	7%	2%	0%	0%
Botswana	2 779	6%	0%	2%	0%
Kenya	47 518	6%	5%	1%	0%
Kazakhstan	3 333	6%	0%	0%	0%
Cape Verde	29	6%	0%	0%	0%
Russia	27 788	5%	0%	0%	0%
Ukraine	31 875	5%	1%	1%	0%
Namibia	3 082	5%	0%	1%	0%
Peru	42 049	5%	1%	1%	0%

Swaziland and Barbados are examples of countries which are heavily reliant on agricultural exports of a few products and preferential receipts. Swaziland's total merchandise exports to the Quad averaged USD 258 million a year, of which USD 125 million were agricultural products. Most of Swaziland's agricultural exports were destined to the EU and the vast majority of those were sugar. With preferential receipts almost equalling 40% of the value of agricultural exports, while merchandise exports are only about double those of agriculture it is not surprising that Swaziland has the highest ratio of the VPM to merchandise exports (19%). Similarly in the case of Barbados, its

major agricultural exports are "*Undenatured ethyl alcohol…*" to the US and sugar to the EU. Agricultural exports represent a sizeable share of Barbados total merchandise exports, but their value is relatively low while VPM is worth one-third of the value of agricultural exports, resulting in relatively high dependence on preferences.

In contrast, countries like Trinidad and Tobago or Cameroon also generate sizeable preferential receipts, which are a hefty share of their agricultural exports. But, these countries have a more diversified merchandise export sector with agricultural goods contributing a smaller share therefore they are less reliant on agricultural preferences. Nepal, one of the LDCs, obtains preferential receipts averaging about USD 1 million a year, representing 33% of the value of its agricultural exports, suggesting high dependence on preferences. However, because merchandise exports are diversified and agriculture is a small part, VPM is a very small share of merchandise exports.

An alternative indicator of potential reliance on preferences is the ratio of the VPM to the value of primary agricultural and food production. This is an indication of the value of producing preference receiving produce relative to total value of agricultural production. Unfortunately, this variable is not easily obtainable for most of the countries in the sample. Therefore, agricultural value added (AVA) is used as a proxy. The results should be interpreted cautiously as this is a net value measure (excludes costs of intermediate inputs) and excludes the value of processed food products. In contrast, the VPM is a gross value measure (includes costs of intermediate inputs) and it includes the value of traded processed products. Consequently, the reported ratio may exaggerate the importance of VPM, in particular in countries with a relatively small and undiversified agricultural sector or in countries where most of the VPM is generated through exporting processed products.

With this caveat in mind, as a share of AVA, the importance of preferences for several countries stands out. There are 14 countries where the share of the VPM to their AVA is at least 5% (Table II.18). This set of countries also includes countries with VPM that places them in the top 30 while for others it is substantially less. For both Mauritius[16] and St. Kitts and Nevis, the VPM represents about half of the value of their AVA, suggesting an agricultural sector with relatively narrow production structure dependant upon preferences. In two other countries, (Guyana and Swaziland), the VPM is at least one-fourth of the value of their AVA, and for another five countries, it is more than 10% of their AVA. Clearly, preference erosion implies substantial adjustments for these countries agricultural and rural sectors (assuming that the VPM is passed through).

Conclusions

The potentially deleterious effect on developing countries from the erosion of their preferential access has received considerable attention during the discussion of the DDA. Because the Quad countries are very large importers of agricultural products, and because they operate a variety of non-reciprocal preferential arrangements, their preferential schemes have received increased scrutiny.

The Quad countries have received notoriety because their tariff schedules contain some of the highest tariffs on agricultural commodities. What is less well recognised, or at least less well discussed, is that their tariff schedules also contain a sizeable share of duty-free access on an MFN basis. And, these duty-free tariff lines are not scheduled on trivial items. Rather, a sizeable portion of Quad country agricultural imports enter free of duty. During the three year period, 2001 to 2003, 30% of Japan's agricultural imports of

USD 33.5 billion on average entered free of duty; 41% of US's USD 45.1 billion entered duty-free; 42% of the EU's USD 56.4 billion, and 46% of Canada's USD 13.3 billion entered free of duty. Developing countries participate in a fair share of this trade. Since the focus of the paper is on the value of the preferential access given by the Quad countries, their duty-free imports do not play a role and are not much discussed. This is not to suggest that this trade is not valuable to the participants. Exporting produce whether dutiable or not, generates export earnings, creates jobs and improves the welfare of the participants.

Nevertheless, the majority of Quad country agricultural imports enter with positive MFN tariff rates, and it is within those products that preferential access matters. The results presented in this report suggest that preferential access to Quad agricultural markets generated, on average, an additional USD 1.4 billion a year to the countries with preferential access. Not a trivial sum, but not very large compared to almost USD 90 billion of dutiable agricultural produce imported each year.

The findings in this report are similar to others, namely, most of the VPM generated in the Quad countries are provided by the EU. Of the USD 1.4 billion in preferential receipts, 80% are generated by exploiting the EU's non-reciprocal preferential schemes, while the US schemes provided an additional 15% of the total. Obviously, preferential receipts from Japan and Canada contribute little to the total.

The findings reported here regarding the concentration of preferential receipts with respect to recipient countries and products is also consistent with those from other studies. Preferential receipts provided by the Quad countries are concentrated into a few developing countries. The preferential scheme receiving most of the VPM is the EU's scheme for ACP countries. This group of countries obtained 67% of total EU VPM of USD 1.1 billion a year. But even within the ACP scheme, only a few countries account for the majority of the preferential receipts. The top five ACP recipients obtained 35% of the ACP VPM. Furthermore, preferential receipts are concentrated in a few countries and commodities. Exports of sugar and bananas by the ACP countries account for 73% of their preferential receipts.

From the exporting countries perspective, there seems to be specialisation in their export destinations with regard to preferences used. There are only two countries, Brazil and Thailand that receive meaningful preferential receipts (more than USD 1 million a year), from each of the Quad countries, and a handful of others—China, Argentina, Indonesia, Malaysia, Colombia, Peru and Guatemala - that are able to do this in three out of the four markets.

A number of countries are reliant on preferences as their exports tend to be concentrated in a few commodities that are receiving substantial preferences. For 37 countries the VPM is more than 0.5% of their agricultural value added while for 11 of them it is more than 10%. Two countries, Mauritius and St. Kitts and Nevis, the share of the VPM to AVA is around half. In one country, Guyana, the VPM is almost 9% of its GDP. There are 20 countries receiving at least USD 1 million in preferential receipts per annum, where the VPM is more than 10% of the value of their total agricultural exports to the Quad, and for two — Mauritius and St. Kitts and Nevis — the ratio is 50% or more; that is, the VPM is approximately half the value of their agricultural exports. Furthermore, there are seven countries where the VPM is greater than 10% of the value of their total merchandise exports to the Quad. Clearly, for this group of countries, preference erosion may entail considerable adjustments.

The preferential scheme for LDCs in each of the Quad countries is at least as favourable as any other scheme in terms of product coverage and the size of preferential margins. Nevertheless, LDCs do not capture a significant amount of preferential receipts. None of the top 30 countries in terms of VPM is an LDC. As the trade data shows, LDCs as a group do not export significant quantities of agricultural produce and thus do not seem to take advantage of the preferences provided. Clearly more emphasis is needed in the future to ascertain what problems are preventing these countries from utilising the preferences provided.

Calculating the VPM is not an exact science. Several assumptions were made for their calculations. The VPM calculated for this exercise are based on the assumption that compliance costs to meet entry requirements under any of the preferential schemes are zero. Studies suggest that such costs can be as high as 5%. Furthermore, the calculations are based on 100% utilisation. Data from the US and Canada for this study and for the EU from OECD (2005a) and Candau and Jean (2005), suggest that utilisation rates, although high, are not 100%. Furthermore, the data for Canada and the US suggest that at times, countries apparently forsake the opportunity to gain preferential receipts by exporting preference-eligible products through the MFN regime. This is circumstantial evidence that compliance costs are positive and that there may be other issues in the architecture of the various schemes that dissuade their full use. Some information is lost when the trade and tariff data are merged and in the case of the EU, a little more information is lost when the tariff data are aggregated in order to merge them with the trade data. Finally, the assumption is that the VPM are "captured" or accrue to the exporting countries, an assumption that is most likely not true in many cases. On balance, the bias of the assumptions was to over rather than under-estimate the VPM. Therefore, given that the value of preferential receipts are most likely overstated and that not all accrue to the exporting countries, analysis of the effects of preference erosion will likely overestimate the costs.

The results further indicate that the question of preferences and their erosion may not be a general issue but one that is of a more pressing issue for a handful of countries only, mostly in the ACP scheme and mostly exporting sugar and bananas. For those countries, it's obvious that reduction of preferential receipts in the future as MFN tariffs on all products are reduced and as the EU is reforming its sugar and banana policies may create economic adjustment problems. In any case, the ACP scheme is destined to be replaced through the Economic Partnership Agreements.

Part II identifies the countries receiving the largest VPM in total and in each of the Quad countries and the commodities that are generating those receipts. This overview, however, does not allow a complete response to the question for which countries and commodities preference erosion may cause problems. This is because the VPM may be large in absolute value but represent a minor part of a country's agricultural sector. On the other hand, the VPM may be small from the perspective of Quad country imports, but may be high when compared to the value of production in the beneficiary country. In such cases, preference erosion may have stronger consequences for the country concerned and may require adjustments beyond the agricultural sector. In addition, this study has not evaluated the broader question concerning the impacts of preference regimes and of the erosion of preferences on the welfare of beneficiary countries. Such questions are beyond the scope of the present study and could only be addressed in further work to evaluate the importance of preferences at the disaggregated product level for each of the beneficiary countries.

The VPM calculated in this study represent an upper bound on the possible costs of totally eliminating non-reciprocal preferences. Although preferential margins will erode with multilateral liberalisation, they will not be eliminated in the foreseeable future. The erosion of the preferential margins will depend upon the agreed modalities. Moreover, tariffs will fall gradually over time, giving countries the time to adjust. Finally, although the focus of the paper is on the potential costs, many studies have shown that multilateral liberalisation leads to overall welfare gains. Even among countries where preferences are eroded, benefits through expanded exports in other sectors can lead to overall gains. But, for LDCs that are not meaningfully engaged in trade, preferences have not yet given them many benefits. Therefore, erosion may not be an issue for these countries, and programmes that address their supply constraints may provide more meaningful assistance.

Notes

1. The terms the value of preferential access, preferential receipts, and the value of preference margin (VPM) are used interchangeably in this report to indicate the additional revenue beneficiary countries potentially receive from their exports relative to non-beneficiaries.

2. For the trade data, this period is chosen because it brackets the period of the tariff data and 2003 was the latest year with complete data for all countries at the time of the analysis. Incorporating earlier years risks mismatches with the tariff data as countries often change the HS nomenclature especially at the HS-8 or HS-9 digit level of this analysis.

3. All values in the report are expressed in US dollars.

4. EU imports exclude intra-EU trade.

5. We also report below on the value of preferences based on a dataset provided by the OECD's Trade Directorate. This dataset includes only imports from developing countries but contains information on which preferential programme was claimed by the exporter.

6. The calculation is based on the margin between the in-quota and the out-of-quota tariff rates times tariff-line imports and assumes that the out-of-quota tariff rate is binding and that there is no water in the tariff. These assumptions tend to lead to an over-estimation of the quota rents. The estimation is not intended as the "true" value of the quota rent but is provided only as an indication of the order of magnitude of the difference between the value of preferential margins provided through the non-reciprocal schemes and the potential quota rents from the TRQ regime.

7. The ATPA scheme ended in 2001 but was renewed in August 2002 (OECD, 2005a). Programme request during these two years may be skewed and the larger value for 2003 may be a truer indication of the value of this scheme.

8. For the ATPA countries the use of the GSP or MFN scheme, especially in 2002, may be the result of the temporary suspension of the programme.

9. As in the Japanese TRQ case, this calculation assumes that the out-of-quota tariff is the relevant instrument and that there is no water in the tariff. To the extent that this assumption does not hold, the calculated quota rents are over-estimated.

10. In 2003 the EU's EBA programme was still relatively young and countries were adjusting to its use.

11. In 2003 the EU's EBA programme was still relatively young and countries were adjusting to its use. Its utilisation and the VPM may increase in the future as countries become more familiar with the requirements.

12. Starting 1 January 2006, the MFN tariff on bananas is EUR 176/ton compared to EUR 680/ton used for this study, while the EU domestic sugar reference prices are scheduled to fall. For white sugar, the fall is from EUR 631.9/ton in the 2006/07

marketing year to EUR 385.5/ton in the 2009/10 marketing year. The reference price of raw sugar is scheduled to drop from EUR 496.8/ton to EUR 319.5/ton during the same time period.

13. The study does not assess the welfare effects of preference erosion on the beneficiary countries.

14. The EU tariff data at our disposal is at the HS-10 digit level whereas the trade data is at HS-8. To merge the trade and tariff data therefore, a simple average tariff rate for each HS-8 trade line was calculated. This procedure can lead to an over or under-estimation of the VPM depending upon whether the preference margin at the HS-10 digit level for lines that are within the same HS-8 digit level are very different from each other and whether most of the imports are under the largest or smallest margin. Since the trade data are not detailed enough, it is not possible to know the overall direction of the calculated VPM. But, a cursory examination of the tariff data at the HS-10 digit level suggests that the relevant margins are usually similar suggesting that the calculated average margin is not overly distorted.

15. Ideally, the trade information would be based on agricultural and total merchandise exports as reported by the exporting country. Unfortunately, export data for many of the developing countries that meet the dependence criteria are either not reliable or they are missing. Therefore, for the computations below, what is referred to as exports from developing countries are imports as reported by each of the Quad countries and exports to world are total imports by the Quad. Clearly, when reference is made to the ratio of the VPM to total exports (agricultural or otherwise) to the extent that these countries export significant products to non-Quad countries, this ratio will be overstated. However, since the Quad countries are large importers of agricultural and other products, the ratio may be reasonable.

16. As indicated above, this measure may be misleading for countries with an agricultural sector that is a small share of the economy and is reliant on the production of only a few commodities. For example, for Mauritius AVA in 2003 was 6.3% of GDP while the sugar industry contributed 4.3% to the GDP.

Annex II.1

Methodology and data for preferential rents

The methodology and data used to estimate preferential rents is presented. Unfortunately, data problems that are ubiquitous in this area continue to confound an assessment based on actual utilisation. As stated in OECD (2005a), data on actual utilisation of the various preferential schemes are difficult to find for the Quad with the exception of the US. Therefore, like other studies (OECD, 2004; Alexandraki and Lankes; Low *et al*), the analysis is based on the assumption that eligible countries fully utilise their preferences. For agricultural products, when all preferential programmes are taken into account, utilisation rates are very high (OECD, 2005a). They are not 100%, however. The 100% utilisation assumption therefore, will over-estimate the value of preferences and as noted by Amiti and Romalis, will likely over-estimate the costs of preference erosion. There are other assumptions that underpin the analysis that also may tend to overstate the value of preferential access. These assumptions are deliberately chosen to provide an upward bias to the calculations in this report, thus providing the maximum potential value of preferential margin (VPM) in order to provide an upper limit on their value and potential magnitude of potential preference erosion for affected recipients. In reality, the degree of the problem may be less severe and in the subsequent modelling application an attempt will be made to capture the appropriate domestic incentive price.

The tariff data used for this analysis are described in OECD 2005b. The sources for the data are Agricultural Market Access Database (AMAD), the World Integrated Trade Solution (WITS), the United Nations Conference on Trade and Development Trade Analysis Information System (UNCTAD-TRAINS), and government sources. US agricultural preferential tariff data were provided by ERS from the US International Trade Commission's database. These were combined with information from AMAD. Information for Canada's preferential tariffs was obtained from UNCTAD -TRAINS and the WTO as provided through WITS and AMAD. For Japan, data was taken from AMAD and WITS. EU tariff data were provided by Mr. Gallezot who obtained them from the Integrated Tariff of the European Communities (TARIC, DG Taxation and Customs Union). The use of the TARIC database is justified here on two grounds. First, it is the official EU tariff database on which Official Journals are based, and second, and more importantly, it contains all the data relating to the regulation of preferential agreements. The TARIC database contains the tariffs currently in use (specified at the 10-digit level) whereas EU's import data found in WITS is at the 8-digit level. The tariff data therefore were aggregated to the 8-digit level taking a simple average of the tariffs in order to merge them with the trade data. This procedure can lead to an over or under estimation of the EU's VPM depending upon whether the preference margin at the HS 10-digit level for lines that are within the same HS-8 digit level are very different from each other and

whether most of the imports are under the largest or smallest margin. Since the trade data are not detailed enough, it's not possible to know the overall direction of the calculated VPM. A cursory examination of the tariff data at the HS-10 digit level suggests, however, that the relevant margins are usually similar suggesting that the calculated average margin is overly distorted. As explained in OECD (2005b), specific tariffs were converted to their *ad valorem* equivalent using world unit values. All tariff data are for the year 2002.

Trade data at the tariff line level and tariff data for each of the Quad countries are combined for this analysis. In order to minimise distortions that a one year examination of trade may provide, we use three year trade data for each of the Quad countries, centred around 2002. The last year, 2003 was selected because at the time of undertaking the analysis, it was the latest year with complete trade data. Furthermore, as described in Annex II.2, the further one goes away from the year 2002, the year of the tariff data, the greater the likelihood that trade data will be missed as countries often change their tariff-line nomenclature beyond the 6-digit level. Any selected period suffers from some shortcomings since in a dynamic world, things change and no one period is "typical". For example, during the period covered by the analysis, the US ended the ATPA scheme in 2001, but renewed it in August 2002. In 2003 the EU's EBA programme was still relatively young and countries were adjusting to its use and its utilisation may increase in the future[1], and it is before the EU enlargement. For these reasons, a three rather than a one year period was selected. The results are reported for each of the three year to enable the reader to discern yearly fluctuations, but most of the discussion is based on the three year average. Tariffs, including preferential tariffs for the three years, on the other hand are based on the data discussed in OECD (2005b), which are for 2002.

Import data at the tariff line level for 2001 to 2003 are obtained from the World Integrated Trade Solution (WITS) for Canada, Japan and the EU. These are tariff line imports at either the 8 or 9-digit level by partner. Information on which programme countries use to gain entrance for their goods is difficult to obtain. The trade data for the EU and Japan at our disposal does not contain this information. Consequently, as others have done, it is assumed that if a country is eligible for a particular preferential scheme, that scheme is used. That is, as stated above, we assume 100% utilisation by each eligible country for each eligible commodity (we do not assume that all items at the tariff line level are eligible as the tariff data allow discrimination between eligible and ineligible lines). Tariff data and trade data for the US are provided by U.S. Department of Agriculture, Economic Research Service. This source is used because in addition to the tariff data, it contains information on tariff line trade flows and indicates which programme was requested by each exporting partner for each flow. In the case of Canada, we received additional data from Finance Canada courtesy of the OECD's Trade Directorate. As in the case of the US, these data also indicate the programme requested by exporting countries. However, the Canadian data are somewhat limited as they are for the years 2002 and 2003 and include only Canada's imports from developing countries. Because of these differences in data availability across countries, the same methodology is used in assessing preferential receipts for all Quad countries to assure consistency; that is to say, full utilisation is assumed for all eligible schemes. As discussed below, the methodology employed tends to over estimate the value of preferential receipts generated by the various scheme. However, results for the US and Canada, also report the value of preferential access based on programme requested by the exporting countries. The differences in the results between the two methods provides an indication of the extent that the value of preferential access is overstated for the US and Canada and is an indicator for the biasness of the results for the other Quad countries.

The value of preferential access[2] provided by any one of the Quad countries under any one of its preferential schemes is calculated as the preferential margin (the difference between the MFN tariff rate and the preferential rate) times the value of imports at the tariff line level.

(1) $VPM_i^k = (T_i^{mfn} - T_i^k) * P_i^w * M_i^k = (T_i^{mfn} - T_i^k) * val_i^k$

Where,

VPM_i^k = the value of preferential margin for product i under preference scheme k,

T_i^{mfn} = MFN tariff rate for product i,

T_i^k = preferential tariff for good i in preferential scheme k,

P_i^w = import price for good i,

M_i^k = imports of product i under preference scheme k

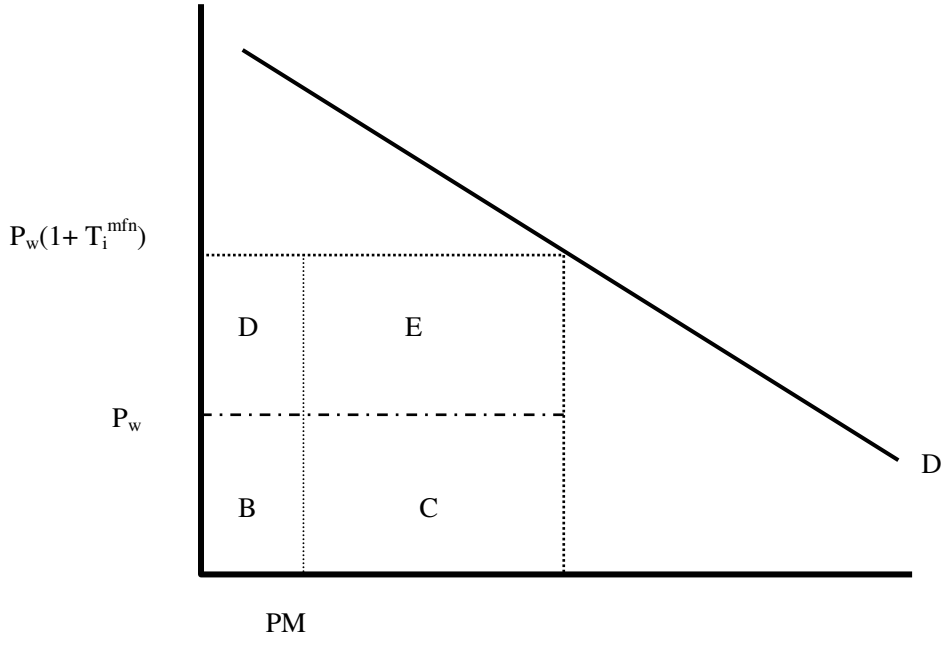
val_i^k = value of trade flow for good i for preference scheme k.

The total value of each Quad country's preferential schemes is obtained by aggregating across the commodities and schemes,

(2) $TV = \sum^k \sum^i VPM_i^k$

For any preference regime, the value of preference can be illustrated graphically as in Annex Figure II.1.1.

Annex Figure II.1.1. Illustration of preferential rents



Annex Figure II.1.1 represents import demand for any product in any of the Quad countries. P_w is the world price and $P_w(1+ T_i^{mfn})$ represents the domestic price for the good given the *ad valorem* MFN tariff rate. In order to make the figure less cluttered, it is assumed that the importing country is a price taker and faces perfectly elastic supply at the world price. With these price conditions, total imports are represented by M.

Given the world and domestic prices, the value of imports is represented by the area below the world price and total imports (B + C in the figure) and the government of this importing country collects tariff revenue equal to the area between the world and domestic price and imports (D + E). Assume that the importing country has one preferential access regime for this product which is provided to a selected group of developing countries. For ease of exposition, assume that the preferential tariff rate is zero (this is often the case in the Quad countries for eligible products especially for least developed countries). Imports from the preferential suppliers are represented by PM. The value of imports from the preferred suppliers is represented by area B, while the tariff forgone by the importing country is represented by area D. It is this area (D) that represents the potential value of the preferential access (VPM) provided by the granting country to the preferential suppliers and it is this area that is measured and reported in the report.

When dealing with large number of imported products by a large number of countries over several years, it is often more convenient to utilize the value of the trade flows rather than individual price and quantity data. This is the approach taken by most researchers evaluating the value of preference margins (Brenton and Ikezuki; Candau and Jean; Hockman, Nolte *et al;* Low *et al*; Alexandraki and Lankes; WTO, 2003). This is also the approach taken for this study. The question then becomes whether the value of the trade flow included the value of the preference margin or whether it is invoiced at world prices. Most of the studies mentioned above assume that the value of the preference margin is not included in the value of the flow. It can be argues, however, that the flow does include the value of the preference, especially for some of the most important preferential flows such as sugar and bananas (Alexandraki and Lanke, Nolte *et al.*). In this case, the value of the trade flow must be adjusted (Nolte *et al.*) or use prices explicitly (Alexandraki and Lankes). For this study, it is assumed that the trade flow includes the value of the preferential margin. Consequently, the calculations are based on multiplying the preference margin ($T_i^{mfn} – T_i^k$) by the value of the flow (adjusted by the MFN tariff rate). An alternatively assumption is that the value of the preference margin is not included in the reported trade statistics. With this assumption, the value of preferential access is obtained by multiplying the margin by the value of the unadjusted trade flow. Calculations based on the later assumption were also undertaken. Not surprising, the computed value of preferential access is higher under the alternative assumption. The results (not reported) indicate that for the Quad, the difference between the two assumptions is about USD 900 million a year, with the difference mostly reflected in the results of the EU and mostly for sugar.

For TRQ products, preferential receipts are calculated similarly in most cases. For most products the Quad countries do not provide preferential access to the out-of-quota tariff rates. Therefore, calculated VPM are based on differences between the MFN and preferential rates for imports within the quota. For a TRQ product, in terms of Annex Figure II.1.1, T_i^{mfn} represents the in-quota tariff rate while the assumption that the preferential rate is zero is maintained, generating a preferential margin. This assumes that the in-quota tariff rate is relevant for determining the domestic price. In cases where the

quota or the out-of-quota tariff rate is binding, the calculated VPM based on the difference between the MFN and preferential in-quota rates will be underestimated.

An adjustment to the methodology is necessary to calculate the VPM for the EU's TRQ products. Unlike the other Quad countries where separate tariff lines are used to distinguish the in-quota from the out-of-quota tariff rates, the EU uses the same tariff lines for both rates. Thus when the link between tariff and trade data is made, it's not possible to identify whether the trade is within or outside the quota in order to calculate the appropriate margin. Furthermore, in some cases, the preferential in-quota tariff rate is higher than the comparable MFN rate because the preferential quota is greater. Continuing the objective to err on the side of over-estimating the value of preferences, the preferential margin is computed by taking the difference between the preferential rate and the out-of-quota tariff rate. This assumes that the EU's out-of-quota tariff rate is always the relevant rate in determining the domestic price. This implies that the value of preferential margin for some TRQ products, such as sugar or bananas may be overestimated to the extent that there is water in the out-of-quota tariff.

Once the VPM is computed, one knows the tariff revenue that the importing country is forsaking, but not where it goes. This is not easily determined and the assumption for this study (as in others such as Alexandraki and Lankes and Low *et al*, WTO) is that the preferential suppliers receive the foregone tariff (the VPM); an assumption that may not be realistic for all products in each Quad country. Different factors determine the allocation of the VPM between importers and exporters including the importing requirements (whether there is a license, who has the right to the licenses for example), bargaining abilities, and market structure, among others. It is probably under exceptional circumstances such as the EU's sugar imports from ACP countries, that one can state with some certainty that the exporters receive the bulk of the preferential receipts. In the more general case the VPM are probably distributed between importers and exporters with the share depending on different factors as stated above. Thus, the VPM calculated for this report only represent the possible upper limits as such, but also may overstate the value accruing to exporters.

Other assumptions may further over estimate the value of preferential access provided regardless of the beneficiary. For example, if the MFN rate is not what determines domestic price, areas D and E will be overstated. This may happen in cases where there is water in the tariff. In such cases, domestic policies such as intervention or guaranteed prices determine the domestic price while protected behind the wall of prohibitive tariffs, as for example sugar imports to the EU. The domestic price will be below the MFN tariff inclusive world price which means that areas D and E are over estimated. In addition, as noted by Low *et al*, for any recipient country, the relevant preferential margin may not be the difference between its preferential rate and the MFN rate, but the difference between its rate and the rates of its competitors, both MFN and preferential. Preferential margins based on rates that competitors also face will be lower than the ones based only on MFN rates. Since the preferential margins in this study do not take into account the rates competing countries pay, the value of preferential access will be overestimated.

The value of preferential access also depends upon the utilisation rate. As reported, 100% utilisation is assumed. To the extent that preferences are not fully utilised, area D will be overestimated. Data for the US and Canada based on programme claimed for agricultural products reported in the main body of the report and for the EU (for all products from Candau and Jean) suggest that the VPM is over-estimated when full

utilisation is assumed. The VPM is 12% higher in Canada, 13% higher in the US and 30% higher in the EU compared to the comparable value based on programme claimed. And, the consequence of preference erosion, the loss of preferential receipts will be overstated if preferential suppliers are not able to expropriate the VPM for themselves but have to share them with agents in the importing country. Finally, the illustration and the calculations presented here assume that qualification to the various schemes is costless, *i.e.* that there are zero compliance costs. Several studies including Francois Hoekman and Manchin, Candau Fontagnè and Jean, have estimated that compliance costs (for all sectors) may reduce preferential margins by about 3 to 5 percentage points. OECD (2005a), focusing only on agricultural and fish products, estimates that compliance costs can range from 2% to 10.9%. Including compliance costs in the analysis would therefore reduce the value of preferential access as preferential margins as high as 10% may not be utilised.

Notes

1. The European Commission (2006), using trade data to 2001 to 2005, suggests that LDCs exports to the EU have not increased materially as a result of the EBA, thereby suggesting that the 2003 cut-off may not seriously bias the results of the analysis.
2. The terms the value of preferential access, preferential receipts, and the value of preference margin (VPM) are used interchangeably here to indicate the additional revenue beneficiary countries potentially receive from their exports relative to non-beneficiaries.

Annex II.2

Background information on the value of imported goods by the Quad countries

This annex provides some of the background information on the value of agricultural goods imported by each of the Quad countries, a summary of the VPM and other relevant information for the beneficiary countries, and the indicative list of products relating to long-standing preferences submitted by the ACP countries to the WTO. The emphasis of the Annex is to identify the value of goods that face positive MFN tariff rates in the Quad countries, from which non-reciprocal preferential schemes the imports originate, and which are the important sectors. This information is used to determine which preferential schemes potentially garner the VPM, and in which agricultural sectors the potential for preferential margins exist.

Canada

Canada's agricultural (as defined at the WTO) imports in 2001 totalled USD 12.3 billion[1] and they rose to USD 14.5 billion in 2003 (Annex Table II.2.1). When the trade data is combined with the tariff data, however, a one-to-one concordance is not always possible as for some trade data the tariff is missing while in other instances for some tariff lines there is no trade. Since calculating the value of preference requires both tariff and trade information, lines where either one is missing are excluded. Retaining only the data with trade and tariff information reduces the sample size.[2] The worst case is in 2001 when about 9% of the trade data are excluded whereas the best case is 2002 where only 5% of the trade data is excluded. The value of imports without missing information is USD 11.2 billion in 2001 increasing to USD 13.6 billion in 2003. These are the agricultural imports that constitute our trade dataset and upon which the value of preferential access is determined. Thus, even though some of the trade data is lost when the trade and tariff data are merged, what remains (93% of average trade during 2001 to 2003) is large enough to provide an accurate description of Canada's imports for the analysis.

Annex Table II.2.1. Agricultural imports: Canada, 2001-2003

	2001	2002	2003	Average
		Million USD		
Total imports	12 345	13 005	14 524	13 291
Imports without missing tariffs	11 213	12 308	13 553	12 358
Imports with MFN rate = 0	5 164	5 642	6 296	5 701
Imports with MFN rate > 0	6 049	6 667	7 257	6 658

The trade data indicate that more than 190 different countries and territories supplied at least one product to Canada in any one of these three years, and that these different suppliers provided more than 1 100 different products (at the HS-8 level) to Canadian consumers. The data suggest, however, that even though many different partners supplied Canada with some imports, Canada's imports are highly concentrated. The US is Canada's largest supplier of imported goods, exporting some USD 8.1 billion per year (66% of Canada's total imports over this period) followed by Canada's other NAFTA partner, Mexico, a distant second at USD 333 million per year. The top five suppliers provided about 75% of Canada's imports during the three-year period, while the top 20 partners provided about 91% of all agricultural imports.

As was reported in OECD 2005b, a large share (31%) of Canada's tariff schedule is duty-free, that is MFN tariffs are zero, and these are provided to products with meaningful trade flows. When the tariff and trade data are combined, we find that USD 5.2 billion worth of goods in 2001 entered Canada duty free and their value increased to USD 6.3 billion in 2003 (Annex Table II.2.1). Thus, over the three year period, 46% of Canada's imports entered duty free. These goods are commercially exchanged and participants capture normal returns. For these imports, however, preferential access is meaningless. In terms of Annex Figure II.1.1, for 46% of Canada's imports, areas D and E do not exist.

It is also useful to examine which dutiable agricultural sectors are imported by Canada and under which preferential scheme. Annex Table II.2.1 shows Canada's average dutiable agricultural imports during the three year period 2001-2003 at the HS-2 digit level. The table contains information for each of the first 24 chapters (except fish). All other items (other than cotton) above chapter 24 are grouped into an aggregate called *OTHER*. The first column shows the three-year average while the following columns show which group of countries were the suppliers.

For dutiable commodities, Canada's largest imports are processed agricultural commodities in Chapters 19 to 21 representing about one-third of total imports. As is evident from the table, NAFTA is the largest source of Canada's dutiable imports in all sectors, (other than Chapter 4), with trade exceeding USD 100 million a year. Countries with non-reciprocal preferences are not very large suppliers to Canada. The largest export sector for the countries in the GPT scheme is Chapter 17 averaging less than USD 200 million a year, while Chapter 22 is the largest sector for the CCCT scheme with an average of only USD 15 million a year.

Annex Table II.2.2. Dutiable agricultural imports by sector and preferential programme: Canada Average 2001 – 2003

	Average imports	LDC	CCCT	GPT	MFN	NAFTA
	Million USD					
Chapter 19 Cereal, flour, starch, milk preparations and products	911	0.0	1.0	40	94	777
Chapter 21 Miscellaneous edible preparations	707	0.0	1.0	27	64	615
Chapter 20 Vegetable, fruit, nut, etc food preparations	572	0.0	1.0	56	45	470
Chapter 17 Sugars and sugar confectionery	549	0.0	1.0	191	106	251
Chapter 10 Cereals	504	0.0	-	57	6	441
Chapter 02 Meat and edible meat offal	438	-	-	1	56	381
Chapter 22 Beverages, spirits and vinegar	368	0.1	15.0	11	104	239
Chapter 18 Cocoa and cocoa preparations	362	0.0	0.0	26	133	203
Chapter 23 Residues, wastes of food industry, animal fodder	333	-	0.0	37	5	291
Chapter 04 Dairy products, eggs, honey, edible animal product nes	329	0.0	0.3	26	202	100
Chapter 15 Animal,vegetable fats and oils, cleavage products, etc	260	0.0	0.0	34	13	213
Chapter 16 Meat, fish and seafood food preparations nes	248	-	-	11	2	235
OTHER *	232	0.2	0.3	13	43	176
Chapter 07 Edible vegetables and certain roots and tubers	213	0.2	1.0	20	10	182
Chapter 09 Coffee, tea, mate and spices	166	0.4	0.4	15	9	141
Chapter 06 Live trees, plants, bulbs, roots, cut flowers etc	134	0.0	0.6	58	39	37
Chapter 11 Milling products, malt, starches, inulin, wheat gluten	89	0.0	0.0	5	10	75
Chapter 01 Live animals	87	-	-	0	2	85
Chapter 24 Tobacco and manufactured tobacco substitutes	68	0.2	0.0	18	16	34
Chapter 08 Edible fruit, nuts, peel of citrus fruit, melons	61	-	0.0	12	4	46
Chapter 12 Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	18	0.0	0.0	1	2	16
Chapter 05 Products of animal origin, nes	5	-	-	0	0	5
Header 52 - Cotton.	2	-	-	0	0	2
Total	**6 658**	**1**	**22**	**659**	**965**	**5 015**

* Agricultural products other than cotton located in chapters above Chapter 24

Japan

During the three year period of 2001 to 2003, 204 countries supplied various agricultural products to Japan providing each year about 1400 different products at the HS-9 digit level. Japan's agricultural imports for 2001 were more than USD 35 billion and imports increased to more than USD 37 billion in 2003 (Annex Table II.2.3). But, even though Japan receives imports from many different countries, the bulk of agricultural imports are provided by a relatively small number of countries. The US is Japan's single largest supplier of agricultural products, providing more than USD 13 billion per year (37% of total) during the three-year period. China is Japan's second largest agricultural supplier providing an average of USD 4.2 billion per year (12% of total). The top five suppliers provided on average 67% of Japan's agricultural imports while the top ten suppliers provided 81% of Japan's imports.

Annex Table II.2.3. Agricultural imports: Japan: 2001 - 2003

	2001	2002	2003	Average
	USD million			
Total imports	35 352.52	34 221.33	37 318.82	35 630.89
Imports without missing tariffs	32 600.01	33 123.75	34 636.93	33 453.56
Imports with MFN rate = 0	9 639.83	10 624.41	10 239.01	10 167.75
Imports with MFN rate > 0	22 960.18	22 499.34	24 397.91	23 285.81

When the trade data are combined with the tariff data (at the HS-9 digit level), as is the case for the other Quad countries, some of the information is excluded. Some tariff

lines are eliminated because trade data for those lines did not exist and some trade data were also eliminated as tariffs for those lines were missing. For the analysis only agricultural trade data without missing tariff information is used. Thus, as shown in Annex Table III.2.3, this data set includes agricultural imports valued at USD 32.6 billion dollars in 2001 (92% of total imports), USD 33.2 billion in 2002 (97% of total) while imports in 2003 are valued at USD 34.6 billion (93% of total). Over the three-year period 94% of Japan's agricultural trade is represented in the study, a sample size sufficiently large to assure that it is representative. In terms of largest suppliers and concentration of supply, there is very little difference whether looking at all trade data or the data without missing tariff information.

For Japan, the largest dutiable import sector is Chapter 2 (*Meat and edible offal*) with more than USD 7 billion a year, followed by three sectors (Chapters 22, 24, and 20) with an average of about USD 2 billion a year (Annex Table II.2.4). Countries in the GSP scheme are important providers of items in Chapters 2, 20, and 7, supplying Japan an average of about USD 1.1 billion a year. Countries in the LDC scheme provide Japan produce worth more than USD 1 million a year in only four sectors (Chapters 7, 8, 2, and 15).

Annex Table II.2.4. Dutiable agricultural imports by sector and preferential programme: Japan average 2001 – 2003

	Import	GSP	LDC	MFN
			Million USD	
Chapter 02 Meat and edible meat offal	7 105	1 049	1.1	6 055
Chapter 22 Beverages, spirits and vinegar	2 066	222	0.1	1 844
Chapter 24 Tobacco and manufactured tobacco substitutes	2 046	13		2 032
Chapter 20 Vegetable, fruit, nut, etc food preparations	1 902	1 077	0.2	825
Chapter 07 Edible vegetables and certain roots and tubers	1 666	1 055	2.8	608
Chapter 08 Edible fruit, nuts, peel of citrus fruit, melons	1 247	377	2.9	867
Chapter 16 Meat, fish and seafood food preparations nes	1 035	764		270
Chapter 21 Miscellaneous edible preparations	996	249	0.1	748
Chapter 19 Cereal, flour, starch, milk preparations and products	803	260	0.0	543
Chapter 04 Dairy products, eggs, honey, edible animal product nes	768	72	0.1	695
Chapter 10 Cereals	689	162	0.0	527
OTHER *	586	197	0.0	389
Chapter 17 Sugars and sugar confectionery	489	210	0.0	278
Chapter 15 Animal,vegetable fats and oils, cleavage products, etc	384	259	1.0	124
Chapter 18 Cocoa and cocoa preparations	346	23	0.1	323
Chapter 11 Milling products, malt, starches, inulin, wheat gluten	315	35	0.0	280
Chapter 12 Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	295	200	0.9	94
Chapter 09 Coffee, tea, mate and spices	293	228	0.7	64
Chapter 23 Residues, wastes of food industry, animal fodder	82	24		58
Chapter 13 Lac, gums, resins, vegetable saps and extracts nes	53	7	0.0	46
Chapter 05 Products of animal origin, nes	43	33	0.0	10
Chapter 06 Live trees, plants, bulbs, roots, cut flowers etc	42	32	0.0	9
Chapter 14 Vegetable plaiting materials, vegetable products nes	36	28	0.1	8
Chapter 01 Live animals	1			1
Total	**23 286**	**6 576**	**10**	**16 699**

Agricultural products other than cotton located in chapters above Chapter 24

United States

The US data are from a different source than data for the other Quad countries and contain information on programme request by each trading partner. Thus, for the US, the data indicate the programme requested (not necessarily granted) which is a truer indication of potential VPM generated (it is still the case that information on who actually gets the preferential receipts is not included). However, to preserve consistency with the results for the other Quad countries, the same methodology is used to generate apparent recipients, that is, it is assumed that all preference programmes are fully used. These results are presented first. The VPM based on programme claimed are also provided since they are a better indicator, and as in Canada's case, provide an indication to the extent the methodology biases the results.

In 2001, US imported USD 42.5 billion in agricultural goods which grew to USD 49.9 billion in 2003 (Annex Table II.2.5). During this three year period, 213 different countries or territories supplied various agricultural products to US consumers, providing some 1 800 different products (HS-8 digit level). Although the sources of US agricultural imports are less concentrated than Japan's or Canada's imports, it is still the case that a relatively small number of the more than 200 partners dominate trade. The US's neighbours and NAFTA partners are the largest suppliers. On average, Canada provided USD 10.8 billion (23% of total) and Mexico provided USD 6.1 billion (13% of total) agricultural products imported by the US. The top five suppliers accounted for over half of US imports while the top 20 provided 81% of the total.

Annex Table II.2.5. Agricultural imports by the US: 2001 —2003

	2001	2002	2003	Average
		Million USD		
Total Imports	42 540	45 474	49 876	45 963
Imports without missing tariffs	39 956	45 474	49 876	45 102
Imports with MFN rate = 0	16 402	18 482	20 074	18 319
Imports with MFN rate > 0	23 553	26 993	29 801	26 782

When the trade data are combined with the tariff data (at the HS-8 digit level), as is the case for the other Quad countries, some information is excluded. In this case, this is relevant only for 2001 where by combining the tariff and trade data some USD 2.6 billion in trade (6%) is excluded.[3] For the analysis therefore, the trade in 2001 is around USD 40 billion. All of the data for 2002 and 2003 however are retained (Annex Table II.2.5, second row). Thus, as the case for the other Quad countries, the sample size is sufficiently large and representative for the analysis.

As reported in OECD (2005b), the US, as the other Quad countries, provides duty free access, on an MFN basis, to its agricultural markets for a sizeable share of its tariff schedule. MFN duty-free access is also given to products with substantial trade flows. How important is trade in duty-free products? In 2001, duty free imports totalled USD 16.4 billion, 41% of total imports. In 2003, total agricultural imports increased as did the value of duty-free imports, totalling USD 20.1 billion (40% of total). During the three year period, duty-free imports averaged USD 18.3 billion per year, about 41% of imports. Dutiable imports, imports where preferential access can provide preferential rents, averaged USD 26.8 billion per year. It is within this group of traded commodities where preferential receipts potentially reside.

In the main body of Part II, information on which groups of countries are supplying the various US agricultural imports, based on the methodology for this study is presented. As mentioned, however, US data contains information on the programme that was requested (Annex Table II.2.6). This is a better indicator of the potential VPM, and is presented here to indicate the extent of the bias the assumption of 100% utilisation implies.

Based upon the programme request information, the results indicate that the chosen methodology for this study over-estimates the value of imports eligible for the various non-reciprocal schemes. For example, imports under the MFN programme are larger compared to the figures derived from the methodology of the study while imports from programme countries are lower. Dutiable imports entering under the MFN programme average USD 12.5 billion per year, USD 1.6 billion more than computed under our methodology. In contrast, imports requesting the GSP scheme (which includes imports from LDC's) averaged USD 1.2 billion per year, USD 2.3 billion less compared to the value calculated with the assumptions of this study. Similar differences are evident for the AGOA and ATPA schemes. The data for the CBERA scheme suggest that the differences are less important. These differences may be due to the fact that countries export goods that are excluded from the various programmes (this cause for the discrepancies is picked up below when the value of preferences is calculated) or that countries for a variety of reasons chose not to take advantage of their preferences. In any case, the chosen methodology over estimates the trade that takes place under the various schemes and thus the size of the potential VPM that may be obtained. This is discussed in the main body of the text. This upward bias is the desired outcome of the assumptions in this study which are predicated on producing the largest possible potential VPM in order to avoid the possibility of under-estimating the potential harm from preference erosion. The results for the US and Canada suggest that we have succeeded in providing an upper estimate of the potential VPM generated by the non-reciprocal arrangements.

What are the major dutiable import sectors for the US and which preferential programmes are the sources? The largest dutiable import sector, averaging almost USD 4 billion a year is Chapter 22, followed by Chapters 7 and 2 with an average of about USD 3 billion a year (Annex Table II.2.7). Based on the definition of the study, the dominant suppliers of most products are the countries in the NAFTA and MFN programmes. Countries in the GSP scheme have important presence in the supply of items in Chapter 8 and 20 with an average of more than USD 600 million a year and in Chapters 24 and 17 with an average of more than USD 300 million a year.

Annex Table II.2.6. Imports by programme requested: United States, 2001 to 2003

Duty Free	2001	2002	2003	Average
		Million USD		
MFN	15 246	18 482	20 074	17 934
NAFTA	1 105	0	0	368
CBERA	26	0	0	9
GSP	24	0	0	8
ATPA	1	0	0	0
Israel-US	0	0	0	0
AGOA	0	0	0	0
Jordan-United States		0	0	0
Total Duty free	16 402	18 482	20 074	18 319
Dutiable				
MFN	10 761	12 632	14 175	12 523
NAFTA	9 770	11 140	11 620	10 843
CBERA	1 262	1 424	1 436	1 374
GSP	1 015	1 259	1 528	1 268
ATPA	586	317	784	562
Israel-United States	100	110	134	115
AGOA	60	109	122	97
Jordan-United States		0	0	0
Total Dutiable	23 553	26 993	29 801	26 782

Annex Table II.3.7. Dutiable imports by sector and preferential scheme US average 2001 —2003

	Average	GSP	GSP-LDC	AGOA	ATPA	CBERA	MFN	NAFTA
				Million USD				
Chapter 22 Beverages, spirits and vinegar	3 829.01	252.36	0.01	29.94	2.11	99.94	3 015.83	428.82
Chapter 07 Edible vegetables and certain roots and tubers	3 140.04	73.77	0.08	3.08	111.82	137.73	308.39	2 505.17
Chapter 02 Meat and edible meat offal	2 935.85	30.89			0.01	56.70	1 665.56	1 182.70
Chapter 20 Vegetable, fruit, nut, etc food preparations	2 304.96	644.17	0.18	20.47	44.33	117.58	625.91	852.33
Chapter 08 Edible fruit, nuts, peel of citrus fruit, melons	1 961.40	679.20	0.13	47.58	48.07	381.29	227.24	577.90
Chapter 17 Sugars and sugar confectionery	1 589.24	300.09	0.01	38.95	84.20	240.95	313.29	611.74
Chapter 21 Miscellaneous edible preparations	1 381.64	112.74	0.02	1.99	3.26	46.31	550.50	666.83
Chapter 01 Live animals	1 227.56	0.09	0.00	0.22	0.01	0.02	0.85	1 226.38
Chapter 04 Dairy products, eggs, honey, edible animal product nes	1 066.73	159.86	0.02	0.04	1.76	6.01	751.86	147.19
Chapter 06 Live trees, plants, bulbs, roots, cut flowers etc	1 044.47	13.54	0.05	4.41	411.90	57.41	270.52	286.63
Chapter 18 Cocoa and cocoa preparations	986.83	86.88		2.41	5.42	1.74	416.20	474.19
Chapter 24 Tobacco and manufactured tobacco substitutes	911.90	338.86	0.35	41.89	35.99	285.96	135.38	73.46
Chapter 15 Animal,vegetable fats and oils, cleavage products, etc	873.94	58.89	0.01	2.92	1.84	4.25	513.50	292.53
Chapter 19 Cereal, flour, starch, milk preparations and products	781.34	43.75	0.07	0.27	5.02	11.01	137.12	584.11
Chapter 29 Organic chemicals.	670.49	164.16	0.17	5.82	3.27	2.21	447.19	47.66
Chapter 10 Cereals	515.05	160.86	0.15	0.13	1.03	0.06	31.53	321.30
Chapter 16 Meat, fish and seafood food preparations nes	425.48	175.39			0.01	0.02	72.63	177.43
Chapter 11 Milling products, malt, starches, inulin, wheat gluten	362.05	18.82	0.09	0.45	5.45	0.52	119.19	217.52
Chapter 12 Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	309.30	53.73	0.09	1.65	2.28	11.02	154.27	86.26
Chapter 13 Lac, gums, resins, vegetable saps and extracts nes	160.10	36.80	0.43	0.27	0.19	6.53	101.40	14.47
Chapter 23 Residues, wastes of food industry, animal fodder	144.62	13.47		0.09	0.03	0.01	14.53	116.48
Chapter 09 Coffee, tea, mate and spices	113.49	40.62	0.01	1.94	6.18	1.40	42.93	20.41
Chapter 05 Products of animal origin, nes	23.90	1.63		0.10	0.07	1.33	13.46	7.30
Header 52 Cotton.	16.87	15.49	0.00	0.00		0.02	1.29	0.07
Chapter 14 Vegetable plaiting materials, vegetable products nes	6.07	0.99		0.59	0.00	0.02	2.00	2.46
Total	**26 782.32**	**3 477.04**	**1.87**	**205.21**	**774.27**	**1 470.04**	**9 932.58**	**10 921.32**

* Agricultural products other than cotton located in chapters before to Chapter 24

The EU

The EU is the largest importer of agricultural products. In 2001, agricultural imports totalled USD 51.3 billion which grew to USD 66.3 billion in 2003[4] (Annex Table II.2.8). During this three-year period, 210 different countries or territories supplied various agricultural products to EU consumers, providing almost 2 200 different products (HS-8 digit level). The largest supplier of agricultural products to the EU, averaging USD 7.4 billion per annum is Brazil, representing almost 13% of total imports. The US, with an average of USD 6.8 billion per year (12% of total) and Argentina with an average of USD 3.7 billion per year (6%), follow. Although the number of countries supplying the EU's import needs is comparable to the number of countries that supply the other Quad countries, EU's imports are less dependent upon particular suppliers. For example, the top five suppliers provide about 38% of total import needs, and the top 20 providers supply 71% of EU's import needs, concentration ratios that are lower than for the other Quad countries.

Annex Table II.2.8. Agricultural imports
European Union 2001 — 2003

	2001	2002	2003	Average
		Million USD		
Total Imports	51 345	55 580	66 348	57 758
Imports with out missing tariffs	47 441	55 580	66 247	56 423
Imports with MFN rate = 0	20 604	23 326	26 691	23 540
Imports with MFN rate > 0	26 837	32 254	39 556	32 882

When the trade data is combined with the tariff data (at the HS-8 digit level), as is the case for the other Quad countries, some information gets lost. For the EU, as for the other Quad countries, the problem is most severe in 2001 when about USD 4 billion in trade (8%) is excluded from the analysis because of missing tariff information, leaving trade of USD 47.4 billion. The problem does not exist for 2002 and only USD 100 million in trade in 2003 is excluded from the analysis. Thus, over the three year period, an average of 97% of the trade is used, a sample size sufficiently large and representative for the analysis.

What are the important items imported by the EU? Annex Table II.2.9 shows that the largest dutiable imports sector is Chapter 8, averaging more than USD 8 billion a year. Average imports drop substantially as average imports in the next three sectors, Chapters 22, 2, and 20, are about USD 3 billion a year. As indicated in the table, countries with non-reciprocal arrangements have a substantial presence in the import market of several produce. The countries in the GSP programme provide imports worth more than USD 1 billion a year in five sectors, and countries in the GSP-DRUGS scheme provide almost USD 2 billion a year in one sector. The largest sector for the countries in the ACP scheme is Chapter 17 with an average of a little more than USD 800 million a year. Imports drop substantially for countries in the EBA programme however. Their most important sector is Chapter 7 with an average of USD 10 million a year.

Annex Table II.2.9. Dutiable imports by sector and preferential scheme European Union average 2001 — 2003

	Total	GSP	EBA	ACP	GSP drug	MFN	Other
				Million USD			
Chapter 08 Edible fruit, nuts, peel of citrus fruit, melons	8 104	1 490	0	683	1 827	1 295	2 809
Chapter 22 Beverages, spirits and vinegar	2 919	496	0	357	75	1 291	701
Chapter 02 Meat and edible meat offal	2 892	1 211	0	91	0	942	647
Chapter 20 Vegetable, fruit, nut, etc food preparations	2 727	1 165	1	108	212	194	1 048
Chapter 10 Cereals	2 164	1 041	1	41	51	741	289
Chapter 07 Edible vegetables and certain roots and tubers	1 951	471	10	224	102	131	1 013
Chapter 15 Animal,vegetable fats and oils, cleavage products, etc	1 877	1 414	0	237	23	99	104
Chapter 17 Sugars and sugar confectionery	1 493	131	2	818	102	80	360
Chapter 24 Tobacco and manufactured tobacco substitutes	1 384	444	2	235	51	468	185
Chapter 04 Dairy products, eggs, honey, edible animal product ne	1 213	158	0	1	5	376	673
Chapter 06 Live trees, plants, bulbs, roots, cut flowers etc	1 159	102	0	309	331	134	283
Chapter 21 Miscellaneous edible preparations	1 137	154	0	38	53	369	523
Chapter 18 Cocoa and cocoa preparations	861	58	0	462	22	24	295
Chapter 16 Meat, fish and seafood food preparations nes	722	569	0	1	0	4	148
Chapter 19 Cereal, flour, starch, milk preparations and products	570	133	0	5	2	118	312
OTHER *	546	169	0	3	5	283	85
Chapter 23 Residues, wastes of food industry, animal fodder	301	40	0	1	0	134	125
Chapter 09 Coffee, tea, mate and spices	261	66	1	91	9	15	79
Chapter 01 Live animals	248	6		0	0	11	231
Chapter 12 Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	220	37	0	2	2	126	52
Chapter 11 Milling products, malt, starches, inulin, wheat gluten	65	15	0	1	3	21	25
Chapter 13 Lac, gums, resins, vegetable saps and extracts nes	61	9		5	0	35	12
Chapter 05 Products of animal origin, nes	0	0		0		0	0
Total	32 873	9 379	17	3 712	2 875	6 892	9 998

* Agricultural products other than cotton located in chapters above Chapter 24

Annex Table II.2.10. The value of preference margin and other selected statistics for beneficiary countries Average for 2001 to 2003

	Value of preference margin	Value of agricultural trade	Value of total merchandise trade	Agricultural value added	Gross Domestic Product
			USD thousands		
Mauritius	158 749	317 523	1 504 639	314 485	4 769 738
Cote d'Ivoire	81 226	2 042 232	2 994 280	2 877 514	11 923 400
Guyana	61 836	145 933	474 781	222 076	719 780
Brazil	61 344	9 605 639	38 497 212	44 642 304	491 655 333
Jamaica	53 076	295 836	1 199 698	500 206	8 350 692
Colombia	51 280	2 204 581	9 179 517	9 974 931	81 251 137
Fiji	50 595	129 878	329 615	295 646	1 903 096
Costa Rica	48 779	1 877 910	5 669 890	1 468 845	16 909 193
Swaziland	48 321	124 979	258 091	192 299	1 451 676
Kenya	47 518	756 412	1 049 125	3 977 768	13 762 317
Cameroon	45 698	467 589	1 853 447	4 538 046	10 312 178
Dominican Republic	42 497	618 435	4 850 169	2 265 436	19 913 003
Peru	42 049	880 165	4 151 108	5 805 056	56 986 810
Thailand	34 078	3 127 187	39 970 836	12 334 941	128 444 367
China	32 961	6 910 434	295 613 391	197 506 924	1 473 199 333
Ukraine	31 875	626 859	4 364 650	6 249 735	43 511 733
Ecuador	30 403	1 341 093	4 028 863	2 070 499	24 178 653
Indonesia	30 289	1 876 738	37 132 369	31 873 757	200 927 233
Guatemala	30 267	1 055 461	3 410 263	5 189 306	22 992 053
Malaysia	29 486	1 207 812	52 452 625	8 619 766	95 739 723
Russia	27 788	541 454	51 587 009	21 289 827	361 048 500
Argentina	26 726	4 454 521	10 041 082	14 843 248	166 778 067
Belize	23 930	103 607	189 734	146 164	959 083
India	23 309	1 897 100	28 604 355	123 132 007	528 614 800
The Bahamas	22 840	317 184	961 701	139 452	5 086 667
Cuba	21 120	215 644	602 340	2 027 000	30 858 133 *
Chile	19 937	2 558 569	11 766 672	2 961 404	69 734 797
Malawi	15 744	157 012	293 504	707 392	1 805 187
Zimbabwe	15 551	185 054	822 336	2 670 608	17 214 920
Trinidad and Tobago	15 223	56 676	3 893 974	117 485	9 398 783
Honduras	13 758	530 744	3 785 771	901 417	6 592 516
Barbados	13 493	41 286	108 841	149 783	2 606 440
Philippines	12 370	934 770	24 868 922	10 837 148	75 485 123
Zambia	11 042	66 268	199 499	870 239	3 889 628
Tanzania	9 700	145 943	389 538	4 405 879	9 836 748
Ghana	8 799	579 401	1 170 423	2 284 792	6 364 324
Papua New Guinea	7 217	275 594	663 985	857 014	3 060 766
St. Lucia	6 949	27 495	51 481	41 584	671 067
South Africa	6 919	2 000 157	21 749 253	4 987 365	131 477 100
Madagascar	6 893	292 894	890 969	1 431 444	4 800 282
St. Kitts and Nevis	5 372	10 011	63 563	10 904	356 346
Nicaragua	5 266	205 556	839 385	783 234	4 092 845
Grenadines	5 009	19 777	103 330	34 467	363 580
Surinam	4 826	21 437	332 991	97 754	911 604
Uganda	4 691	179 869	269 267	1 969 338	5 926 386
Senegal	4 680	107 386	419 430	1 042 987	5 687 984
Mozambique	4 412	44 948	719 593	1 002 320	4 191 468
Pakistan	4 103	303 950	5 911 973	17 943 879	75 110 420
Sudan	3 683	106 977	537 587	6 441 786	15 595 027
Ethiopia	3 607	193 085	287 125	2 803 298	6 344 216
Poland	3 445	1 743 698	30 511 615	6 399 486	195 702 933

Annex Table II.2.10. The value of preference margin and other selected statistics for beneficiary countries: average for 2001 to 2003

	Value of preference margin	Value of agricultural trade	Value of total merchandise trade	Agricultural value added	Gross Domestic Product
Tonga	65	14 578	25 412	41 561	149 445
Guinea	62	20 365	549 499	797 140	3 293 513
Bosnia and Herzegovina	55	26 903	655 739	718 520	5 833 722
Latvia	50	73 519	2 415 935	416 627	9 497 578
Armenia	50	3 281	191 885	636 188	2 427 270
Estonia	47	76 668	3 442 022	343 758	7 403 268
Niger	41	3 393	103 492	908 703	2 282 408
Jordan	40	8 490	665 281	244 228	9 565 077
Gabon	36	1 636	2 364 678	396 620	5 119 885
Burundi	32	21 178	25 562	315 233	637 608
Mauritania	30	1 825	419 670	238 240	1 184 880
Antigua and Barbuda	30	5 531	273 479	27 789	729 383
Cape Verde	29	484	16 163	63 908	654 574
Kyrgystan	27	4 528	#N/A	628 584	1 683 256
Netherlands Antilles	26	11 733	671 897	19 609	2 928 864 *
Sierra Leone	24	6 516	136 355	483 555	910 618
Samoa	23	1 335	12 208	38 481	273 238
Lithuania	22	216 169	3 196 875	1 014 906	14 837 813
Afghanistan	22	13 431	49 268	1 756 182	3 698 082
Eritrea	21	1 032	6 092	101 937	684 291
Slovakia	17	116 245	10 726 084	1 049 256	25 928 893
Solomon Is	17	1 521	#N/A	120 233	242 747
Malta	15	8 618	1 443 296	96 727	4 177 422
Sao Tome and Principe	14	5 649	8 926	9 950	52 258
Romania	14	258 547	11 146 415	6 516 969	47 778 363
Bermuda	12	1 858	135 953	26 967	3 721 519 *
Liberia	10	2 217	645 368	237 354	512 533
Turkmenistan	8	15 454	264 253	1 039 084	4 580 825
Djibouti	7	1 161	6 369	18 461	596 838
Oman	7	5 809	3 148 188	421 281	20 617 340
Kuwait	6	2 550	8 619 593	191 146	36 996 050
Bhutan	5	216	2 368	195 627	576 561
Syria	5	134 986	3 834 111	5 094 286	20 344 593
Somalia	5	1 467	3 752	879 470	1 353 030 *
British Virgin Island	4	1 188	111 144	11 333	807 333 *
Angola	4	997	5 593 908	913 433	11 198 608
Congo	4	16 398	938 243	3 193 221	5 366 306
Cyprus	4	114 017	654 816	416 112	11 045 194
Macao	4	1 644	2 135 862	0	6 485 789
Bahrain	3	1 069	952 185	58 511	8 692 252
Equatorial Guinea	3	3 869	1 666 103	181 092	2 244 947
Central African Republic	3	8 756	115 867	598 599	1 069 564
Mongolia	3	14 637	217 777	248 577	1 136 092
Guinea Bissau	3	2 176	8 931	119 910	213 756
Albania	3	20 112	371 819	1 247 199	4 773 663
Seychelles	2	691	276 836	18 803	673 137
Qatar	2	234	6 734 012	56 868	19 291 483
Tajikistan	2	33 096	82 697	337 231	1 298 707
Myanmar	2	18 513	971 635	5 175 657	8 925 066 *
Cook Islands	2	645	4 312	13 387	107 412 *
Brunei	1	372	2 120 888	141 514	4 386 297 *
Maldive Island	1	251	151 808	54 885	652 155
Cayman Island	1	2 196	345 439	5 093	1 525 810 *
Anguila	1	472	2 686	2 535	113 706 *

Annex Table II.2.10. The value of preference margin and other selected statistics for beneficiary countries: average for 2001 to 2003

	Value of preference margin	Value of agricultural trade	Value of total merchandise trade	Agricultural value added	Gross Domestic Product
Algeria	1	24 852	15 655 293	6 195 954	59 595 580
Kiribati	0	11	22 809	7 765	53 167
Marshall Is	0	687	99 614	10 685	102 938
Nauru	0	250	6 308	5 969	38 027 *
Chad	0	47 860	58 141	854 011	2 095 219
Lesotho	0	115	342 751	151 449	846 085
Palau	0	24	23 670	3 070	121 833
Montserrat	0	90	1 949	449	37 264 *
New Caledonia	0	3 570	351 500	56 699	3 119 562 *
Republic of Korea	0	4 362	280 744	3 303 603	11 974 930 *
Andorra	0	3 159	60 279	11 474	1 507 968 *

Definitions

Agriculture corresponds to ISIC divisions 1-5 and includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production.

Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. The origin of value added is determined by the International Standard Industrial Classification (ISIC), revision 3.

* *Source* : UN data

Source: World Bank national accounts data, and OECD National Accounts data files.

Annex Table II.2.11. Provisional indicative list of products relating to long-standing preferences

HS4	HS4 Description
0201	Meat of bovine animals, fresh or chilled
0202	Meat of bovine animals, frozen
0207	Meat and edible offal, of the poultry of heading No 0105, fresh, chilled or frozen
0602	Other live plants (including their roots), cuttings and slips; mushroom spawn
0603	Cut flowers and flower buds of a kind suitable for bouquets or for ornamental purposes, fresh, dried, dyed, bleached, impregnated or otherwise prepared
0703	Onions, shallots, garlic, leeks and other alliaceous vegetables, fresh or chilled
0708	Leguminous vegetables, shelled or unshelled, fresh or chilled
0709	Other vegetables, fresh or chilled
0710	Vegetables (uncooked or cooked by steaming or boiling in water), frozen
0714	Manioc, arrowroot, salep, Jerusalem artichokes, sweet potatoes and similar roots and tubers with high starch or inulin content, fresh, chilled, frozen or dried, whether or not sliced or in the form of pellets; sago pith
0802	Other nuts, fresh or dried, whether or not shelled or peeled
0803	Bananas, including plantains, fresh or dried
0804	Dates, figs, pineapples, avocados, guavas, mangoes and mangosteens, fresh or dried
0806	Grapes, fresh or dried
0807	Melons (including watermelons) and papaws (papayas), fresh
0808	Apples, pears and quinces, fresh
0810	Other fruit, fresh
0813	Fruit, dried, other than that of headings 0801 to 0806; mixtures of nuts or dried fruits of this chapter
0905	Vanilla
1001	Wheat and meslin
1002	Rye
1006	Rice
1102	Cereal flours other than of wheat or meslin
1103	Cereal groats, meal and pellets
1508	Ground-nut oil and its fractions, whether or not refined, but not chemically modified
1511	Palm oil and its fractions, whether or not refined, but not chemically modified
1513	Coconut (copra), palm kernel or babassu oil and fractions thereof, whether or not refined, but not chemically modified
1701	Cane or beet sugar and chemically pure sucrose, in solid form
1703	Molasses resulting from the extraction or refining of sugar
1804	Cocoa butter, fat and oil
1904	Prepared foods obtained by the swelling or roasting of cereals or cereal products (for example, corn flakes); cereals (other than maize (corn)) in grain form or in the form of flakes or other worked grains (except flour, groats and meal), pre-cooked or ot
2002	Tomatoes prepared or preserved otherwise than by vinegar or acetic acid
2005	Other vegetables prepared or preserved otherwise than by vinegar or acetic acid, not frozen, other than products of heading No 2006
2008	Fruit, nuts and other edible parts of plants, otherwise prepared or preserved, whether or not containing added sugar or other sweetening matter or spirit, not elsewhere specified or included
2009	Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit, whether or not containing added sugar or other sweetening matter
2101	Extracts, essences and concentrates, of coffee, tea or maté and preparations with a basis of these products or with a basis of coffee, tea or maté; roasted chicory and other roasted coffee substitutes, and extracts, essences and concentrates thereof
2103	Sauces and preparations therefor; mixed condiments and mixed seasonings; mustard flour and meal and prepared mustard
2204	Wine of fresh grapes, including fortified wines; grape must other than that of heading No 2009
2207	strength
2208	Undenatured ethyl alcohol of an alcoholic strength by volume of less than 80 % vol; spirits, liqueurs and other spirituous beverages
2309	Preparations of a kind used in animal feeding
2401	Unmanufactured tobacco; tobacco refuse
2402	Cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco substitutes

NOTES

1. All values in the report are expressed in U.S. dollars.
2. Reasons for the discrepancies between import and tariff data is beyond the scope of the paper. A contributing factor is that often the tariff-line nomenclature changes from year to year. This partly explains why there is more trade data missing in 2001 and 2003. This is not just the case for Canada. The data for the other Quad countries exhibits a similar pattern.
3. The year 2001 is the one most problematic because in 2002 the HS numbering convention was revised eliminating some HS lines and adding others. The tariff data used in the analysis is for 2002 using the newer HS nomenclature.
4. EU imports exclude intra-EU trade.

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Annex A

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Acronyms and Abbreviations

AIDC	Automotive Industry Development Centre
AIDS	Acquired Immune Deficiency Syndrome
AMTS	Advanced Manufacturing Technology Strategy
Armscor	Armaments Corporation of South Africa
ASGISA	Accelerated and Shared Growth Initiative for South Africa
ASSAf	Academy of Science of South Africa
BEE	Black economic empowerment
BERD	Business Enterprise Expenditure on Research and Development
BPO	Business process outsourcing
BRIC	Biotechnology Regional Innovation Centre
CeSTII	Centre for Science and Technology and Innovation Indicators
CHE	Council on Higher Education
CIDAUT	Research and Development Centre in Transport and Energy, Spain
CIS	Community Innovation Survey
CRI	Crown Research Institute, New Zealand
CSIR	Council for Scientific and Industrial Research, South Africa
CSP	Customised Sector Programme (a DTI initiative)
DACST	Department of Arts, Culture, Science and Technology (now the DST)
DEAT	Department of Environmental Affairs and Tourism
DEEM	Design, engineering, entrepreneurial and management
DEET	Department of Environmental Affairs and Tourism
DESA	Development Bank of Southern Africa
DoE	Department of Education
DST	Department of Science and Technology
DTI	Department of Trade and Industry
Eskom	Electricity Supply Commission
EU	European Union

FDI	Foreign direct investment
FEST	Foundation for Education, Science and Technology
FFG	Austrian Research Promotion Agency
FRAM	Norwegian entrepreneurship training programme
FTE	Full-time equivalent
GDP	Gross domestic product
GEM	Global Enterprise Monitor
GEAR	Growth, Employment and Redistribution
GERD	Gross domestic expenditure on research and development
GTS	Advanced Technology Group, Denmark. A network of research institutes.
HBT	Historically black technikon
HBU	Historically black university
HEI	Higher education institution
HERD	Higher Education Expenditure on Research and Development
HIV	Human immunodeficiency virus
HSRC	Human Science Research Council
HWT	Historically white technikon
HWU	Historically white university
ICT	Information and communications technology
IDC	Industrial Development Corporation
IKS	Indigenous knowledge system
IMEC	Interuniversity Microelectronics Centre, Leuven, Belgium
IMS	Integrated Manufacturing Strategy
IP	Intellectual property
ISI	Institute for Scientific Information, Philadelphia
IT	Information technology
IWT	Institute for the Promotion of Innovation by Science and Technology in Flanders, Belgium
JIPSA	Joint Initiative on Priority Skills Acquisition
KIBS	Knowledge-intensive business services

MEC	Minerals-energy complex
Mintek	Council for Mineral Technologies
MiTech	Missions in Technology
MPE	Multotec Process Equipment
MNC	Multinational Corporation
MRC	Medical Research Council
MSDS	Metals Sector Development Strategy
NACI	National Advisory Council on Innovation
NCTC	National Casting Technology Centre
NECSA	Nuclear Energy Council of South Africa
NFTCC	National Fibre, Textile and Clothing Centre
NRF	National Research Foundation
NSTF	National Science and Technology Foundation
NTCCD	National Technology Transfer Center
PBMR	Pebble Bed Modular Reactor
PPP	Purchasing power parity
PRI	Public research institute
R&D	Research and development
RANNIS	The Icelandic Centre for Research
RCN	Research Council of Norway
RDP	Reconstruction and Development Programme
RISA	Research and Innovation Support and Advancement division of NRF
S&T	Science and technology
SAASTA	South African Agency for Science and Technology
SAAVI	South Africa AIDS Vaccine Initiative
SADC	South Africa Development Community
SEDA	Small Enterprise Development Agency
SETA	Sector Education and Training Authorities

SINTEF	The Foundation for Scientific and Industrial Research at the Norwegian Institute of Technology
SME	Small, medium and micro enterprise
SP	SP Technical Research Institute of Sweden (formerly the State Testing Authority)
SPII	Support Programme for Industrial Innovation
STI	Science, technology and innovation
STU	The Swedish National Board for Technological development
TAP	Technology Advancement Programme
TEKES	Finnish Funding Agency foe Technology and Innovation
TFP	Total factor productivity
THRIP	Technology and Human Resources for Industry Programme
TNO	Netherlands Organisation for Applied Scientific Research
UNISA	University of South Africa
VAT	Value-added tax
VINNOVA	Swedish Governmental Agency for Innovation Systems
VTT	VTT Technical Research Centre of Finland

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Acronymes

ACN	Association canadienne de normalisation
AOO	Conseil de gestion des déchets des Pays-Bas
BCAE	Bonnes conditions agricoles et environnementales
BRDE	Bureau de recherche et de développement énergétiques (Canada)
CBP	Chesapeake Bay Program
CCE	Conseil des Communautés européennes
CCME	Conseil canadien des ministres de l'Environnement
CEAP	Conservation Effects Assessment Project (États-Unis)
CEE-ONU	Commission économique pour l'Europe des Nations Unies
CMNÉH	Code modèle national de l'énergie pour les habitations
CNRC	Conseil national de recherches du Canada
CO_2	Dioxyde de carbone
COV	Composés organiques volatils
CUE	Conseil de l'Union européenne
DBO	Demande biochimique en oxygène
DCR	Department for Conservation and Recreation (État de Virginie)
DEFRA	Ministère de l'Environnement, de l'Alimentation et des Affaires rurales (Royaume-Uni)
DEQ	Department of Environmental Quality (État de Virginie)
DLA	Defense Logistics Agency (États-Unis)
ECOS	Environmental Council of the States (États-Unis)
EEC	Energy Efficiency Commitments (Royaume-Uni)
EPA	Agence pour la protection de l'environnement (États-Unis)
EQIP	Environmental Quality Incentives Program (États-Unis)
EST	Energy Saving Trust (Royaume-Uni)
ETS	Système européen d'échanges de quotas d'émission
FDA	Food and Drug Administration (États-Unis)
FFDCA	Loi fédérale sur l'alimentation, les médicaments et les produits cosmétiques (États-Unis)
FIFRA	Loi fédérale sur les insecticides, les fongicides et les rodenticides (États-Unis)
FSA	Farm Service Agency (États-Unis)
GES	Gaz à effet de serre
Hg	Mercure
LATS	Landfill Allowance Trading Scheme (Royaume-Uni)
LESA	Landlords' Energy Saving Allowance (Royaume-Uni)
MAFF	Ministère de l'Agriculture, de l'Alimentation et de la Pêche (Royaume-Uni)
MINAS	Système de comptabilisation des éléments minéraux (Pays-Bas)
MTAS	Système de contrats de transfert des effluents d'élevage (Pays-Bas)

N	Azote
NEWMOA	Northeast Waste Management Officials' Association (États-Unis)
NH_3	Ammoniac
NMP	Plans de gestion des éléments nutritifs
NPEP	National Partnership for Environmental Priorities Program (États-Unis)
NRCS	Natural Resources Conservation Service (ministère de l'Agriculture des États-Unis)
NVMSRP	National Vehicle Mercury Switch Removal Program (États-Unis)
OEE	Office de l'efficacité énergétique (Ressources naturelles Canada)
OFGEM	Office of Gas and Electricity Markets (Royaume-Uni)
OMC	Organisation mondiale du commerce
OMS	Organisation mondiale de la santé
OPR	Organisation de producteurs responsables
ORD	Office of Research and Development (Agence pour la protection de l'environnement des États-Unis)
OSPAR	Convention pour la protection du milieu marin de l'Atlantique du Nord-Est
P	Phosphore
PAC	Politique agricole commune de l'UE
PAREL	Programme d'aide à la remise en état des logements (Canada)
PATLD	Convention sur la pollution atmosphérique transfrontière à longue distance (CEE-ONU)
Phosphate	Phosphate
PIB	Produit intérieur brut
PNUE	Programme des Nations Unies pour l'environnement
POP	Polluants organiques persistants
PRDE	Programme de recherche et de développement énergétiques (Canada)
PRN	Packaging Waste Recovery Notes (Royaume-Uni)
RCRA	Loi sur la conservation et la récupération des ressources (États-Unis)
SCHL	Société canadienne d'hypothèques et de logement
SFT	Agence de lutte contre la pollution (Norvège)
SNUR	Significant New Use Rule (États-Unis)
SO_2	Dioxyde de soufre
TRI	Toxics Release Inventory (États-Unis)
TRNEE	Table ronde nationale sur l'environnement et l'économie (Canada)
U	Union européenne
USDA	Ministère de l'Agriculture des États-Unis
UWR	Universal Waste Rule (États-Unis)
VROM	Ministère du Logement, de l'Aménagement du territoire et de l'Environnement (Pays-Bas)
WCA	Waste Collection Authorities (Royaume-Uni)
WDA	Waste Disposal Authorities (Royaume-Uni)
WPZ	Zones de protection des eaux (Royaume-Uni)
WRAP	Waste and Resources Action Programme (Royaume-Uni)
ZSN	Zones sensibles aux nitrates
ZVN	Zones vulnérables aux nitrates

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