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FOODSECURE
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Assessing EU trade preferences for developing countries' development and food security

Parisa AGHAJANZADEH-DARZI¹, Cecilia BELLORA², Jean-Christophe BUREAU^{1,2},
Anaïs GOBURDHUN¹

¹ *UMR Economie Publique, INRA-AgroParisTech, 78850 Grignon, France*

² *CEPII, Research and expertise on the World economy, 75007 Paris, France*

Abstract

The EU has a long history of specific trade arrangements with developing countries. Under a variety of schemes, the EU allows developing countries to export goods to the Community market with reduced or zero duty. The stated objective is to encourage economic growth and to promote sustainable development in developing countries through their integration into the world trade system. Recently, these schemes have experienced significant reform. This applies particularly to the case of the Generalized System of Preferences and the arrangements affecting African, Caribbean, and Pacific countries. In addition, preferential (reciprocal) trade agreements are replacing non-reciprocal tariff concessions. We describe the current status of EU trade policy with developing countries, focusing on those where food security is a major issue. We assess the impact of selected preferential schemes, using an applied general equilibrium model. Our counterfactual simulations show that removing EU preferences will impact negatively on some developing country economies; both exports and gross domestic product will go down (particularly in North and Sub-Saharan African regions). Overall, our simulations suggest that EU preferential agreements provide export opportunities and contribute to higher incomes, particularly the least developed countries. However, their contribution to food security is indirect. Because of the magnitude of the prices and income changes which we measure at the aggregate level, the impact on food and nutrition security indicators seems limited. To explore in more depth the impact of EU preferences on the food security of particularly vulnerable segments of the population would require our simulations to be combined with household data.

Keywords: EU trade policy, agricultural trade, food security, developing countries

JEL Classification: F13, Q17, Q18

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1. Introduction

The European Union (EU) grants preferential access to the EU market to developing countries. Some of these preferences date back to the 1960s. Because of the historical (colonial) past of some EU member states, regional preferences targeted African, Caribbean and Pacific (ACP) countries in particular. Other schemes applied to a broader set of developing countries. All these preferential schemes had some development-related objectives. The EU non-reciprocal regional preferences whose compatibility with multilateral commitments is questionable, faced political pressure from third countries, and has promoted the EU to introduce reciprocal concessions. However, the EU has maintained specific preferential schemes for the poorest countries.

The economic impact of EU preferential schemes has long been controversial. The evidence suggests that beneficiary countries are not always able to take advantage of lower tariffs because of supply side constraints, non tariff barriers (e.g. sanitary standards), or the difficulty involved in sourcing enough inputs within their own borders to comply with rules of origin requirements. However, there is also evidence that these preferences coincide with the development of exports, in particular in raw commodities and textiles. Debate continues, and includes many questions regarding the actual impact of EU preferential schemes for developing countries.

Some authors use a combination of statistical and econometric techniques to estimate the effects of preferential trade regimes on trade flows (e.g. Inama, 2004; Anania et al., 2014). Others use partial or general equilibrium models to evaluate the impacts of changes in preferential access to European markets (e.g. Brenton and Ikezuki, 2004; Francois et al., 2006; Fontagné et al., 2010). Econometric approaches using observed data find a positive impact of preferential access on the intensive margin of trade; the effects on the extensive margin are often less compelling (Jean and Bureau, 2015). The magnitude of the effects varies across the type of preference, across sectors and across countries' income levels. Econometric approaches, often based on gravity models, focus on the direct impact on trade flows and make it possible to work at a great degree of detail in tariff lines. Partial equilibrium models and general equilibrium models account better for indirect effects, i.e. the impact of investment and growth on trade flows. They are also more able to disentangle diversion and creation effects than, say, gravity based approaches to preferential tariffs. General equilibrium models have the advantage that they take account of the impacts of preferential regimes on the whole economy, and of dynamic aspects (investment and capital reallocation across sectors), and also assess the impact of preferential agreements on growth and welfare.

We use a multi-sector and multi-country computable general model (MIRAGE) and detailed datab on applied tariff protection from MAcMap to assess the impact of preferential arrangements granted by the EU to developing countries. These schemes include the various components of the EU

Generalized System of Preferences (GSP), regional preferences granted to ACP countries, and a variety of recent bilateral agreements that have replaced GSP preferences for particular countries. The database on trade protection includes tariff rate quotas and non ad-valorem protection at a very detailed level (6-digit level of the United Nations Harmonized System). Our reference scenario is the current situation, and the counterfactual scenario is of a world without EU trade preferences for developing countries. The resulting changes in the developing economies and trade patterns help us to assess the value of the preferences. Our results suggest that EU trade preferences granted to developing countries do matter. In terms of Gross Domestic Product (GDP), the long term impacts are significant especially for North and Sub-Saharan Africa, with the removal of European preferences resulting in GDP decreases larger than 0.25 percentage points. The removal of trade preferences would result in the reallocation of some of the trade diverted by preferential tariffs. However, this reallocation would not compensate for the decrease in developing countries' exports to the EU. The consequences would be the loss of several billions of euros of exports for developing countries. Indicators for the state of food security derived from our macroeconomic results show that the removal of EU trade preferences would also have a negative impact on food security. However, our global model relies on aggregated social accounting matrices. The benefit of being able to take account of price and trade effects which cascade across countries and sectors comes at a price, which is the reliance on representative agents. In order to explore the food security issue further, our "macro" approach is completed with microeconomic simulations to represent household heterogeneity in developing countries.

2. EU trade policy and developing countries

Various EU schemes allow developing countries to export their goods at lower duty. Historical ties mean that some of these preferences were granted on a geographical basis which typifies arrangements with ACP countries under successive schemes.¹ Other schemes are more recent. They were implemented as a way to promote developing countries' economic growth and development. This applies to the case of the GSP under which scheme the EU grants developing countries or

¹ Current ACP members include Angola, Antigua and Barbuda, Belize, Cape Verde, Comoros, Bahamas, Barbados, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo (Brazzaville), Congo (Kinshasa), Cook Islands, Côte d'Ivoire, Cuba, Djibouti, Dominica, Dominican Republic, Eritrea, Ethiopia, Fiji, Gabon, Gambia, Ghana, Grenada, Republic of Guinea, Guinea-Bissau, Equatorial Guinea, Guyana, Haiti, Jamaica, Kenya, Kiribati, Lesotho, Liberia, Madagascar, Malawi, Mali, Marshall Islands, Mauritania, Mauritius, Micronesia, Mozambique, Namibia, Nauru, Niger, Nigeria, Niue, Palau, Papua New Guinea, Rwanda, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Solomon Islands, Samoa, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Suriname, Swaziland, Tanzania, Timor Leste, Togo, Tonga, Trinidad and Tobago, Tuvalu, Uganda, Vanuatu, Zambia and Zimbabwe.

territories preferential access through reduced or zero duty. Even more recently, two GSP sub-schemes were implemented - the Everything But Arms (EBA) initiative, and the so-called “GSP+”. Both provide preferences additional to the standard GSP. In addition, the EU has engaged in the conclusion of bilateral and regional Free Trade Agreements (FTAs), which rely on reciprocal preferences.

As Gallezot and Bureau (2005) describe, the combination of non-reciprocal agreements and the combination of these schemes with reciprocal (free-trade) agreements was always cumbersome, especially in the case of ACP countries which qualified for several, often overlapping preferential regimes. As a result, EU preferential schemes for developing countries have recently been reformed. The GSP, which used to provide modest but widespread preferences to any country classified as “developing” in the 1970s, was reformed to focus more on the poorest countries. The non-reciprocal arrangements with the ACP countries have been replaced by reciprocal arrangements, more in line with the principles set out in multilateral agreements. More precisely, new Economic Partnership Agreements (EPAs) are being concluded with seven ACP regions on a reciprocal basis, replacing the non-reciprocal preferences granted under former provisions of the Cotonou agreement.²

EU-South Mediterranean relations are managed bilaterally through the so called Euro-Mediterranean Association Agreements which in many cases, result in free trade areas, or at least, low reciprocal tariffs. Additional (reciprocal) FTAs have been concluded, some with countries as remote as South Africa, Chile and Mexico. While agreements with emerging or developed countries are not the topic of interest of this paper, these agreements have indirect consequences for the poorest countries, for example through the risk of eroding the value of the preferences granted to those countries more exposed to food insecurity.

In this section we presented the recent changes in the EU trade policy towards developing countries. The main preferential schemes of interest are the GSP, and its special provisions (GSP + and EBA), selected FTAs and the specific arrangements for ACP countries.

2.1. The EU Generalized System of Preferences

In 1968, the United Nations Conference on Trade and Development argued for a scheme which would allow developing countries' exports to developed countries to benefit from preferential treatment.

² The regions that have forged or are negotiating an agreement with the EU are West Africa, Southern African Development Community, Central Africa, Eastern and Southern Africa, Eastern African Community, Pacific states and the Caribbean states. Prior to EPAs, ACP countries benefited from non-reciprocal preferences under the so-called Cotonou agreement (many also enjoyed GSP preferences, in particular those eligible for the EBA). The Cotonou Agreement followed several Lomé Conventions and was signed in 2000, it came into force in 2003. It was revised first in 2005 and then in 2010. The development and cooperation pillars of the Cotonou Agreement are scheduled to expire in 2020; the economic and trade cooperation part officially ended in 2007.

After the General Agreement on Tariffs and Trade (GATT) allowed the “Most Favored Nation” (MFN) clause to be waived in such cases, the European Community in 1971 implemented the GSP. This led to a non-reciprocal lowering of European duty for products originating from countries classified as "developing". The EU GSP framework has evolved over time. It experienced major reforms in 2005, 2008 and 2012 (Regulation No 978/2012).

Before the 2005 reform, almost all developing, transition and intermediate countries were eligible for a GSP scheme although product coverage was limited and preferential margins were small. In many cases, the reform removed only a small part of the tariff. Some relatively economically advanced countries (e.g. Singapore, Republic of Korea, Brazil) were eligible, which meant that the poorest countries faced considerable competition from these countries. However, if an eligible country was competitive in a particular sector, it faced graduation. This meant that the percentage of a particular country's EU imports granted a preference was subject to an upper limit. This rule was intended to spread the benefits of market access across countries rather than their being captured by a single competitive exporter.

The 2005 reform introduced a differential approach which provided a scale of preferences which still characterizes the recent GSP. The current scheme has three main variants. The standard agreement, commonly called the GSP scheme, grants duty reductions for a given proportion of EU tariff lines (currently around two-thirds). The GSP+ which is a special incentive for sustainable development and good governance and offers zero duty for essentially the same tariff lines as under the standard agreement, for countries that ratify and implement some specific international conventions. Finally, the EBA which is a special arrangement for the Least Developed Countries (LDCs) which grants duty free quota free access for all products except arms.

In 2008 and 2012 some changes took place regarding the number of products covered, the countries that were eligible and the graduation clauses. The reform decided in 2012 and implemented in January 2014 with a one year transition period, introduced major changes. It has four main objectives: to focus on partners most in need by offering more advantages to the LDCs while reducing those granted to the more advanced countries; to enhance the GSP+ in order to better support partners which are serious about implementing international conventions; to make the system more transparent, stable and predictable for economic operators; to adapt to the new EU institutional framework (i.e. Lisbon Treaty procedures) which gives a larger role in trade policy to the European Parliament.

The new GSP scheme was designed to hold for ten years (with the exception of EBA, which has no expiry date) and will no longer be subject to frequent revision. The preferences for those countries that qualify as upper middle income and high income have been reduced. Countries with preferential access to the EU which is at least as good as under GSP, for example under a free trade regime or a special autonomous trade regime, are now excluded from the GSP. This ended the complex system of

overlapping preferences.³ The number of eligible countries decreased from 183 countries. In October 2014, 96 countries benefited from the EU GSP - 34 under the "standard" GSP scheme,⁴ 13 under the GSP+ special regime and 49 which were LDCs that received extra preferences under the EBA initiative. Countries that are no longer eligible benefit from transition periods.⁵ Among the countries that will not be covered by the GSP scheme, 26 have other preferential trade agreements with the EU (e.g. FTA, EPAs),⁶ 33 are overseas territories with specific provisions that ensure a preferential access to the EU market, and 28 countries are considered higher-income⁷ or upper-middle-income⁸ (European Commission, 2014). Reform of the GSP, in theory, should be neutral for countries with other preferential access because they are eligible for similar preferences, while the products from higher income countries will enter the EU under MFN tariffs.

The graduation system has been simplified for GSP eligible countries. Now, only two types of graduation apply to countries eligible for the standard GSP regime (other provisions exist for GSP+, see below). A country is removed from the list of beneficiaries if it is classified by the World Bank as a high-income country for three consecutive years. When the value of GSP-covered products in the relevant section imported from a given beneficiary country exceeds 17.5% of the total imports of the

³ However, it is notable that most of the of LDCs under EBA also are eligible for EPAs; so eligibility for two preferential schemes (EBA and EPAs) is still possible.

⁴ The list of low and lower-middle income countries eligible for the GSP in October 2014 includes Botswana, Cameroon, China, Colombia, Congo (Republic of), Cook Islands, Cote d'Ivoire, Fiji, Ghana, Honduras, India, Indonesia, Iraq, Kenya, Kirghizstan, Maldives, Marshall (Islands), Micronesia, Namibia, Nauru, Nicaragua, Nigeria, Niue, the Philippines, Sri Lanka, Syria, Swaziland, Tajikistan, Thailand, Tonga, Turkmenistan, Ukraine, Uzbekistan, Vietnam.

⁵ E.g., in practice, Turkmenistan (and also Gabon) will be removed from the list of GSP eligible countries in 2016 after being classified by the World Bank as an upper-middle income country in 2012-2014. Equatorial Guinea (now classified as a "high income" country by the World Bank) will cease to benefit from the EU GSP in 2020. Some countries that have signed but not yet applied bilateral preferential market access to the EU, such as Botswana and Namibia, will continue to benefit from the GSP scheme (until January 1 2016) despite being classified as upper middle income countries by the World Bank (Regulation EU 101/2014). A reciprocal preferential market access agreement with Central American countries entered into force in 2013. As a consequence, in 2016, Panama, Peru, Columbia, Honduras, Nicaragua, Costa Rica, El Salvador, Guatemala will be removed from the GSP list.

⁶ The partners that have been removed from the GSP beneficiary list because of other preferential arrangements are 6 Euromed countries (Algeria, Egypt, Jordan, Lebanon, Morocco, Tunisia), 14 Cariforum countries (Belize, St. Kitts and Nevis, Bahamas, Dominican Republic, Antigua and Barbuda, Dominica, Jamaica, Saint Lucia, Saint-Vincent and the Grenadines, Barbados, Trinidad and Tobago, Grenada, Guyana and Surinam), 3 countries from Eastern and Southern Africa (Seychelles, Mauritius, Zimbabwe), 1 Pacific country (Papua New Guinea) and 2 other countries (Mexico and South Africa). 33 other overseas countries and territories add to the countries that are no longer eligible for preferences under the GSP scheme.

⁷ This applies to Saudi Arabia, Kuwait, Bahrain, Qatar, United Arab Emirates, Oman, Brunei Darussalam and Macao.

⁸ This applies to 5 Latin American countries (Argentina, Brazil, Cuba, Uruguay, Venezuela), 4 countries from ex-USSR (Belarus, Russia, Kazakhstan) and 5 other countries (Gabon, Libya, Malaysia, Palau).

same products from all GSP beneficiary countries to the EU over three consecutive years, the GSP treatment is withdrawn from the section of products originating in the considered beneficiary country. As soon as these criteria are no longer met, countries benefit again from GSP provisions. In practical terms, amongst the 86 countries that currently benefit from the GSP regime, six have to comply with constraints for specific products because of graduation criteria. Their industries in these particular sectors are considered competitive at a level that might squeeze other beneficiaries out of the EU market. The number of tariff lines covered has expanded with the 2014 reform. However, several major agricultural products are still not eligible for the standard GSP regime (see Appendix C for the example of sugar). Instead, they are covered by EBA and the GSP+ (see below).

2.2. The Everything-But-Arms initiative

The EBA initiative was implemented on February 2001. It is officially a sub-scheme of the GSP. It grants to 49 LDCs full duty-free quota-free access to the EU market for all LDC exports except arms.⁹ Preferential access to the EU market is responding to long demand from the poorest countries for a special differential treatment to foster their development.

While the US and Canada also have zero tariff provisions for LDCs under their own GSP, the EU scheme now covers all products. It is broader and more predictable than most other developed countries' GSP schemes, making the EBA an ambitious development scheme by international standards. The EU has a long term commitment to maintaining these preferences. Unlike the cases of the GSP and the GSP+, there is no time limit and eligibility is automatic. However, the list of eligible countries is subject to revision.¹⁰

⁹ The 49 countries eligible for the EBA at the end of 2014 were 34 African countries (Angola, Benin, Burkina Faso, Burundi, Central African Republic, Chad, Comoros, Congo RDC, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Rwanda, Sao Tome-and-Principe, Senegal, Sierra Leone, Somalia, South Sudan, Sudan, Tanzania, Togo, Uganda, Zambia); 10 Asian countries (Afghanistan, Bangladesh, Bhutan, Cambodia, Laos, Myanmar, Nepal, Timor-Leste, Yemen); 5 Pacific countries (Kiribati, Samoa, Solomon Islands, Tuvalu, Vanuatu) and 1 Caribbean country (Haiti) (European Commission, 2014). Note that Equatorial Guinea, recently classified as "upper income" by the World Bank is eligible for the EBA initiative until 2020 based on a transition period. After 2020, it should become eligible for MFN treatment unless a regional EPA is signed with the Central Africa region.

¹⁰ E.g. South Sudan has been added to the list of beneficiary countries (retroactive application as from January 2013), while Maldives has been removed from the list because it is no longer considered a LDC. This will apply to Equatorial Guinea after a transition period (2020). Samoa has ceased to be an LDC and has a transition period allowing it to benefit from EBA until the end of 2016. On June 13, 2012, the EU reinstated GSP preferences for Myanmar with retroactive application as from 13 June 2012 (these preferences were withdrawn from Myanmar/Burma in 1997 due to serious and systematic violations of the principles of the international conventions on forced labour).

In sectors still eligible for the high MFN or GSP tariff which includes many agricultural sectors in the EU, the EBA provides LDCs with an opportunity to export with a significant preferential margin. While this applies less than in the past (when EU agricultural prices were administratively maintained above world prices), the EBA initiative still allows LDC producers to access markets where their products are sold at higher prices, generating rents that can provide cash and boost investment. Another indirect effect is that tariff preferences provide incentives to access markets with higher standards, which encourages development of higher quality control procedures which in turn, can provide access to other markets. On the other hand, these standards are such that supply side constraints restrict the ability of many LDCs to take advantage of EBA benefits (Gallezot and Bureau, 2005). Furthermore, even if tariffs are set to zero for EBA eligible countries, there are many non-tariff measures that prevent them from exporting. This applies particularly to the agricultural sector where many LDCs are unable to export animal products to the EU because they cannot be declared free from infectious diseases, since these countries lack the administration and infrastructure to control potential disease outbreaks.

2.3. The GSP+ scheme

In addition to the "standard" GSP scheme, the EU implemented a GSP+ which entered into force in 2005. In particular, it replaced the former GSP-drugs which granted tariff preferences to countries that participated actively in the fight against drug trafficking, so that farmers had more opportunities to market agricultural products which could be an alternative to coca and other sources of narcotics.¹¹ The GSP+ preference is aimed at promoting sustainable development and good governance in developing countries already eligible for GSP. It consists of offering even more reduced duty (practically zero) on essentially the same products covered by the standard GSP (European Commission, 2014). Three criteria decide eligibility for the GSP+. The first is related to sustainable development, and the other two are related to economic vulnerability: 1) if the country has ratified and implemented 27 specific international conventions in the fields of human rights, core labor standards, sustainable development and good governance; 2) if the country has less than 2% of imports in the imports of all GSP beneficiaries in the products section; 3) if the country has its 7

¹¹ The so called GSP-drugs arrangement, officially named the "Special arrangement to combat drug production and trafficking", was initially granted by the EU to Andean Community countries in the 1990s, and more precisely to imports of certain products originating from Bolivia, Colombia, Ecuador, Peru, and later Venezuela.

largest GSP-eligible product sections accounting for at least 75% of its total exports to the EU. The number of countries eligible for the GSP+ is small - currently 13.¹²

Following the 2012 reform, countries eligible for GSP+ can apply for it at any time rather than having to wait for a particular round for admission. Graduation no longer applies to GSP+ countries. Also, other criteria for entry to the GSP+ scheme have been relaxed, which makes it more accessible. For example, the import-share threshold (i.e. the share of exports covered by the GSP originating in the considered country in the total GSP eligible exports from all the beneficiary countries) was doubled, extending eligibility for GSP+ to other countries (e.g. Philippines, Pakistan); the non-diversification criteria were relaxed, allowing the number of sectors accounting for at least 75% of total exports to the EU, to increase from 5 to 7; and finally the constraints on countries with a limited number of exports were relaxed (see European Commission, 2013 for details).

2.4. Limitations of the GSP

One of the major ongoing criticisms of the EU GSP scheme has been that the preferences granted to developing countries were underutilized (e.g. Brenton2003). That is, many exports potentially eligible for the GSP were actually shipped to the EU under the MFN regime, that is, in practice, they were subject to higher duties. Administrative requirements, rules of origin constraints and fixed compliance costs have been highlighted as responsible for this “underutilization” of the GSP regime. However, Gallezot and Bureau (2005) show that the main reason for the apparent underutilization of the EU GSP is that, often, eligible countries had a double choice, and their exports were eligible for two preferential regimes. Typically, ACP firms could export under the Cotonou regime or the GSP, and tended to prefer the former because it was more familiar, or because it was easier to meet the rules of origin requirements, or the paperwork was less demanding. The authors show that once several competing schemes were aggregated, the rate of utilization of the global set of preferences is actually very high. Their findings are consistent with the idea that the GSP regime involved significant compliance costs that could deter the use of these schemes for products with a low MFN tariff, or for small shipments (see Bureau et al., 2007 for agricultural products). Another longstanding criticism of the EU GSP has been the limited number of products covered, at least under the standard GSP. This criticism is less valid following the recent reforms but many agricultural products are still excluded from the scheme.

¹² Armenia, Bolivia, Cape Verde, Costa Rica, Ecuador, El Salvador, Georgia, Guatemala, Mongolia, Pakistan, Panama, Paraguay and Peru. Note that because of the phasing in of the preferential agreement with Central America, Costa-Rica, Guatemala, El Salvador, Panama and Peru will cease to be GSP+ beneficiaries starting January 1, 2016.

Some particular criticisms have been addressed to the EBA scheme, for not doing enough to diversify LDCs' exports. For goods other than primary commodities, LDCs lack export capacity. Also, they find it difficult to match EU standards. Some 14 years after implementation of the EBA, the range of products exported by LDCs under the EBA remains narrow, and heavily biased towards raw commodities such as sugar, and clothing. However, to state that LDCs are exporters of raw commodities which are subject to low MFN tariffs is to ignore the potential for new exports as economic development occurs which applies to many parts of Africa for example. The fact that beneficiary countries do not have export capacity is not a valid justification to conclude that preferences are useless. Drawing conclusions on the basis of existing exports neglects longer term developments. There is evidence that countries such as Malawi, Zambia and Sudan now export much more to the EU since the introduction of the EBA initiative.

Critiques of the EBA stress that discrimination between certain regions or countries generates trade diversion, and that the benefits derived by some developing countries are achieved at the expense of other developing countries (Panagariya, 2002). In particular, Sri Lanka and several other countries have long lamented implementation of the EBA claiming that nearly equally poor but non-LDC/non-ACP developing countries were harmed by the EBA preferences. Given the actual trade flows originating from LDCs these claims seem unfounded. Since the implementation of the EBA initiative there is no visible evidence that imports originating in LDCs have displaced imports from other sources with the possible exceptions of sugar and garments. The surge in sugar imports from LDCs under the EBA has matched the decline in sugar exports from non-EBA eligible Caribbean and Pacific producers. However, reform of the EU sugar sector, which made the EU market unattractive for traditional exports with high production costs is more of an issue than is the EBA in this area (see Appendix C). In relation to garments, because of the low level of protection in the EU, there has been little diversion effect, and the end of textile quotas has led to a surge in imports from China.

Agreements such as the EBA are said to help generate an industry which might not have existed in the LDC had the preference scheme not been introduced (Anderson, 2004). Preferences such as the EBA are said to lock in patterns of trade which inhibits adjustment to profitable new markets. However, empirical investigation of the functioning of the EBA suggests that none of these criticisms is compelling. EU trade policy will have little effect if the country granted preferential access to the EU market lacks decent institutions. The ability to export duty free to the EU can give local producers a degree of leverage with traders and brokers (e.g. in the banana and the sugar sectors).

2.5. Free Trade Agreements (FTAs)

One of the aims of the 2012 GSP reform was to better articulate unilateral trade preferences and bilateral trade agreements with developing countries. Prior to the reform, several countries that benefitted from the GSP scheme also benefitted from other arrangements (already entered into force or under negotiation). These countries were excluded from the new GSP scheme if they benefitted from an equivalent access to the European market under a non GSP arrangement. In the following, we detail the bilateral agreements that now rule the trade relationships between these developing countries and the EU.

2.5.1. Economic partnership agreements

The EU used to grant non-reciprocal trade preferences to the ACP states under the Yaoundé and then the Lomé conventions, and finally the Cotonou Agreement. This preferential treatment was geographically based, and not based specifically on development indicators. Non-ACP countries (e.g. Asian countries) complained that it was unfair towards non-ACP states with a similar level of development. Hence, the ACP provisions were declared incompatible with World Trade Organization (WTO) rules.

The former non-reciprocal arrangements gave place to a set of regional bilateral trade deals called "Economic Partnership Agreements" or EPAs, eligible for waiver of the general MFN clause in a multilateral framework. The Cotonou agreement signed on June 23, 2000 includes a progressive scheme planning the conclusion of seven regional EPAs. The EPAs involve the EU and seven regions.¹³ To enjoy preferential access to the EU market through the EPAs, each of the seven groups of ACP countries was required to create a customs union between participants. This is different from the general EU "neighboring" policy since the regional integration policy is a condition related much more to conclusion of a EPA than say, the agreements concluded with Mediterranean countries

¹³ Country membership of the 7 regional EPA groups includes:

- 1) West Africa: Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo, Mauritania.
- 2) Central Africa: Cameroon, Central African Republic, Chad, Congo (Brazzaville), Congo-Democratic Republic of (Kinshasa), Equatorial Guinea, Gabon, São Tomé & Príncipe.
- 3) Eastern and Southern Africa : Comoros, Djibouti, Eritrea, Ethiopia, Madagascar, Malawi, Mauritius, Seychelles, Somalia, Sudan, Zambia, Zimbabwe.
- 4) East African Community: Kenya, Uganda, Tanzania, Burundi and Rwanda.
- 5) Southern African Development Community: Angola, Botswana, Lesotho, Mozambique, Namibia, South Africa, Swaziland.
- 6) Caribbean (CARIFORUM): Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St Lucia, St Vincent and the Grenadines, St Kitts and Nevis, Suriname, Trinidad and Tobago.
- 7) Pacific: Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia, Federated States of, Nauru, Niue, Palau, Papua New Guinea, Samoa American, Samoa Western, Solomon Islands, Tonga, Tuvalu, Vanuatu.

(which are signed between the EU and each individual country). The EU argument is that economic development in sub-Saharan Africa would benefit from further regional integration which would bring benefits in terms of economies of scale, comparative advantages, and lifting of supply side constraints thereby reducing the cost of doing business for foreign investors.

Each country which enters an EPA is required gradually to eliminate the tariffs on a significant share of its tariff lines, according to a well-defined schedule. This market opening is asymmetric in the framework of EU-ACP relations, that is, market access for the EU is "duty free quota free" but market partial in the case of ACP countries acceding to the EPA. ACP countries can implement the tariff concessions for a period of 15 years (or 25 in some cases) and retain protection on 20% of the most sensitive imports. The degree of opening of ACP markets is an important commercial negotiation issue between the parties. The Cotonou Agreement states that some ACP countries may not be interested in signing an EPA in which case they have no choice but to export to the EU under the GSP (for GSP eligible countries) or the MFN regime.

The EPA with Cariforum was implemented in December 2008. This comprehensive EPA includes commitments beyond trade in goods, that is, on trade in services, investment, intellectual property rights, competition and public procurement. Negotiations with the West African community and the South African community were concluded in February and July 2014 respectively, and with the East African community in October 2014. The corresponding agreements are yet to be ratified by each partner. Other EPAs are still being discussed, with what are turning out to be significant delays compared to the original schedule in the case of the Central Africa region (see Box 1).

These delays are becoming problematic since the waiver which allowed the continuation of non-reciprocal preferences under the Cotonou Agreement expired in 2007. Then, as of January 1, 2008, the Market Access Regulation provisions¹⁴ set a temporary unilateral scheme for European trade with those countries which had not finalized an EPA. Imports from these countries enter the European market near duty free and quota free.¹⁵ The countries which have initialed an interim EPA gain duty-free access under the interim EPA. Central Africa (with the exception of the single country of Cameroun) has yet to conclude its EPA negotiations. Thus, exports from Gabon to the EU, for example, will shift to the MFN regime unless an EPA is concluded (Equatorial Guinea is in the same situation after a transition period). Exports from Congo should be eligible for the GSP. Overall, for

¹⁴ Council Regulation (EC) No 1528/2007 of December 20, 2007.

¹⁵ Interim arrangements have been put in place with some countries within the 6 ACP regions: Cameroon in Central Africa (ratified July 2014 with provisional application since August 2014); Mauritius, Seychelles, Zimbabwe and Madagascar in Eastern and Southern Africa (provisionally applied since 2012); Papua New Guinea and Fiji in the Pacific (see Box 1). The provisional arrangements were scheduled to be replaced by regional arrangements but this stage has yet to be reached.

regions other than Central Africa, the EU is currently offering duty-free and quota-free access for all exports from ACP countries, even under interim arrangements.

Box 1. The current EPAs situation

Caribbean (CARIFORUM). The EPA was signed in October 2008 (except Haiti, signed December 2009). It was approved by the European Parliament in March 2009 and has been applied provisionally since the end of 2008 (except for Haiti, which has not ratified it but enjoys EBA preferences).

West Africa. The full EPA was initialed on June 30, 2014.

Central Africa. An interim EPA with the region initialed in 2007 and approved by the European Parliament in 2013. Cameroon is the only country which signed and ratified (July 2014) the interim EPA.

East African Community. Full EPA agreed with East African Community members (Burundi, Kenya, Rwanda, Tanzania, Uganda, Kenya) initialed on October 16, 2014. Signature and ratification are pending.

Southern African Development Community. The full EPA was initialed by Botswana, Lesotho, Namibia, Swaziland, Mozambique and South Africa in July 2014. Signature and ratification are pending. Angola was an observer at the negotiations but is not party to the EPA.

Pacific. The interim EPA was ratified by Papua New Guinea (February 2011) and signed by Fiji (December 2009). Provisional application began by Papua New Guinea in December 2009 and by Fiji in July 2014.

Eastern and Southern Africa. Zimbabwe and Seychelles have ratified the interim EPA. Mauritius and Madagascar have signed it (August 2009), and the interim EPA has been initialed by Comoros and Zambia (December 2007). Madagascar and Mauritius have notified provisional implementation since May 2012. The European Parliament approved this interim EPA in January 2013.

Note that ratification of EPAs seems to take a considerable time, with the European Parliament part being particularly slow.

2.5.2. EU-South Africa Trade, Development and Cooperation Agreement (TDCA)

The TDCA was signed in October 1999, and fully implemented in 2004. One of its objective was to enhance the economic partnership between the EU and South Africa, including through reciprocal trade liberalization. As in all association agreements signed by the EU, trade is only one of many components, and the TDCA was aimed also at political dialogue, promotion of democratic principles, human rights and the rule of law, protection of the environment, culture, fight against drugs, etc. The TDCA covers about 90% of the bilateral trade between the EU and South Africa. In practice, it covers 95% of the EU's imports from South Africa, and 86% of South Africa's imports from the EU. Liberalization schedules were completed in 2012.

Both South Africa and the EU have chosen to partially liberalize or exclude from the TDCA some specific tariff lines. For the EU, they concern mainly agricultural products (beef, sugar, certain dairy products and starch products, certain fresh fruits at particular periods, etc.). South Africa has also removed some agricultural products (in particular live animals, sugar, certain dairy products, barley and wheat) and some industrial products (see table 1) (CIDSE, 2008). Both parties may implement safeguards for some products whose import would seriously threaten national production. The TDCA origin rules (which define criteria for whether a product originates from South Africa or not) are designed to be compatible with the GSP rules but are simpler and more flexible.

Table 1: Examples of sensitive products outside the scope of tariff reductions from trade liberalization between the EU and South Africa.

European Union's list of products	South Africa's list of products
Beef	Certain animals (beef cattle, pigs, goats, sheep)
Sugar	Sugar
Certain dairy products	Certain dairy products
Corn and related products	Corn
Starches	Barley and derived products
Certain cut flowers	Wheat and derived products
Certain fresh fruit (citrus, apples, pears, grapes, bananas)	Chocolate
Prepared tomatoes	
Certain prepared fruit and fruit juice	
Certain wines	
Vermouth	
Ethyl alcohol	

2.5.3. EU-Mexico Global Agreement

The EU opened its market to Mexico in 1997 through a so-called Economic Partnership, Political Cooperation and Cooperation Agreement (known as Global Agreement). This agreement came into force in July 2000, and aimed to enhance access to the European market for Mexican exports, and to encourage more foreign direct investment from the EU to Mexico. In addition to the trade component, the Global Agreement covers such topics as political, social, cultural and human rights issues. Trade liberalization covers trade in both services and goods including agriculture, energy, transportation, tourism, statistics, science and technology, environment, financial services, telecommunications and information services. For industrial products, the EU agreed to phase out tariffs on 82% of imports from Mexico by value, by 2003; Mexico agreed to eliminate tariffs on 47% of imports from the EU by value by 2007. In the case of agricultural products and fisheries, the EU and Mexico agreed to eliminate tariffs on 62% of trade within 10 years. The EU list of concessions excludes many agricultural products, such as dairy products, meat, sugar, cereals, and some tuna and some tobacco products. The Mexican list of exclusions includes dairy products, potatoes, eggs, starch and malt, sugar, some cereals, and some fruits and vegetables.

2.5.4. EU-Chile Association Agreement

Chile was excluded from the list of GSP beneficiaries in 2007 (Regulation n. 566/2007), before the 2012 reform of the GSP scheme, for the same reason that Mexico, South Africa and ACP countries were removed from the beneficiary list in 2012. All tariff preferences granted to Chile under the European GSP scheme have been incorporated in a bilateral trade agreement. Note that we do not analyze the impact of Chile's exit from the GSP scheme in our simulation exercise; we consider only those countries that left the GSP scheme after the 2012 reform.

2.5.5. Euro-Mediterranean Association Agreements

Since the 1960s, several bilateral agreements have existed between the European Community and North African countries. Current Euro-Mediterranean Association Agreements started in 1995. The objective of these agreements was to create a Euro-Mediterranean partnership and remove the barriers to trade and investment between European and Southern Mediterranean countries. The main pillars of this partnership related to economic integration were: (i) North-South (inter-regional) integration based on liberalization of trade between European and Mediterranean countries; and (ii) South-South (intra-regional) liberalization involving the EU supporting the various trade relations among the Mediterranean countries. These agreements were negotiated in the context of the Barcelona process which provided a broader framework which included political and security dialogue, social, cultural and human partnerships, and other forms of economic partnership.

Despite this common framework, the different bilateral agreements signed between the EU and the Mediterranean countries differ greatly in the products covered (e.g. Jordan has a few exemptions in its exports eligible for duty free treatment but this does not apply to the Maghreb countries). Nine countries have concluded agreements with the EU: Turkey (which entered into force in December 1995), the Occupied Palestinian Territory (from July 1997), Tunisia (from March 1998), Morocco (from March 2000), Israel (from June 2000), Jordan (from May 2002), Egypt (from June 2004), Algeria (from September 2005) and Lebanon (from April 2006). Negotiations with Libya and Syria started in 2008 but have been suspended for obvious reasons.

3. Assessing the impact of EU preferences for development

By providing export opportunities to ACP countries, EU trade policy is aimed at fostering economic development. The mainstream vision is that trade opportunities, and more generally, insertion in the

global trade system, contribute to economic growth. Lack of income among rural households, and hence lack of the capital required to start an accumulation process have long been identified as a major bottleneck to agricultural development which export opportunities, by providing a source of cash could help to solve.

Assessing the impact of EU preferences requires a benchmark for comparison. Their cross-market effects make general equilibrium models particularly interesting. They make it possible to construct a baseline, and to "shock" this baseline, for example, through the imposition of a scenario where the preferences are removed. The difference between the baseline simulations and the alternative scenario makes it possible to assess the global impact of the scenario, and to account for price induced changes in supply and demand across markets. This is the basis of the methodology used in this study.

3.1. Actual tariff preferences

The combination of GSP, the ACP preferences (Cotonou) and the FTAs results in significantly lower tariffs on developing countries' exports to the EU MFN tariffs. Table 2 presents the average tariffs for bilateral trade flows between the EU and developing countries (the regions and sectors match those used in the model simulations). We distinguish the aggregate (i) "EBA" which includes countries eligible for the EBA regime, (ii) "FTA" which includes countries subject to the standard GSP regime in 2007 which by 2014, had signed a FTA with the EU (see Annex table A.2), (iii) "GSP" which is all the countries subject to the standard GSP regime since 2007(see Box 2 and Annex A).

The figures in table 2 are aggregates based on bilateral applied tariffs (i.e. including tariff preferences) at the HS6 level. The original source is MAcMap for year 2007. Tariff rate quotas and specific tariffs converted to *ad valorem* equivalents (AVE), are included (see Guimbard et al. 2012).¹⁶ We also present tariff aggregates for both the baseline and the scenario in 2015.¹⁷ In the baseline scenario, in

¹⁶ MacMap-HS6 is a joint effort by the International Trade Commission (which collects primary data) and CEPII (Centre d'Etudes Prospectives et d'Informations Internationales), which provides data on more than 5,000 products (see Guimbard et al., 2012 for details). MAcMap-HS6 was matched with the tariff schedules of each WTO member using a specific dataset constructed by CEPII. The resulting data provide information on bound tariffs (WTO members), MFN tariffs and bilateral tariffs imposed by 190 importing countries on 220 exporting entities. As far as possible, applied tariffs take account of all existing arrangements including the GSP and other non-reciprocal schemes as well as bilateral and regional agreements and the unilateral setting of lower than MFN tariffs.

¹⁷ The aggregation methodology in Bouët et al. (2008). Tariffs, including AVEs of tariff rate quotas and specific tariffs, are aggregate based on a weighted average. A simple average of tariffs is problematic since it gives the same weight to important and marginal products. In our aggregation, the weights are given by the imports from a reference group of similar countries (normalized to account for each country's size). This weighted scheme is used to minimize endogeneity bias (if the tariff is prohibitive, there is low or no trade, which means no weight if a simple trade-weighted average is used, and therefore a downward bias in the measure of protection) while taking account of the specificities of each economy and relying on generally available data.

2015, we simulate evolution of the GSP after the 2009 and 2014 reforms (see details in Box 2). Hence, in the simulations, "GSP" refers to those countries currently eligible for the standard GSP or GSP+, which remain eligible for GSP after the 2014 reform. Those countries that exited or will exit the GSP scheme following the 2014 reform because of a FTA signed with the EU27 (e.g. an EPA) are included in the "FTA" grouping for 2015. The aggregate tariffs presented in table 2 correspond to the applied tariffs following the GSP reform and the FTAs ("baseline"), and the hypothetical scenario with no preferences, so that exports from countries currently eligible for the GSP, EBA and FTAs will be subject to MFN tariffs.¹⁸

Table 2: Average tariff protection on EU27 imports (*ad valorem* equivalent, percentage, weighted by the structure of exports of the reference group).

Exporter		Average tariffs			Sectoral tariffs					
		Overall	Agri.	Indus.	Cattle	Clothing	FV	Meat	Rice	Sugar
2007	EBA	0.26	3.00	0.00	0.00	0.00	0.00	0.02	26.89	50.83
	FTA	1.04	9.62	0.38	9.08	0.00	9.36	32.55	24.88	78.99
	GSP	2.89	11.65	2.80	10.50	8.52	12.60	35.36	25.33	105.24
2015 Baseline	EBA	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	000
	FTA	0.05	0.48	0.01	0.00	0.00	0.01	0.01	0.02	5.52
	GSP	2.37	11.22	2.81	10.51	8.52	12.46	35.34	25.32	86.29
2015 Scenario (MFN tariffs)	EBA	4.17	12.23	6.56	58.53	11.42	6.75	51.23	29.45	62.65
	FTA	4.56	17.19	4.13	64.92	10.30	15.20	44.79	24.90	91.04
	GSP	3.56	16.20	3.33	39.92	9.80	19.95	37.81	25.45	105.33

Source: MAcMap-HS6; Note: In the Average tariffs column, "Agri." is Agriculture; "Indus." is Industry. MFN duties are applied in 2015 in the scenario. The change in GSP protection between 2007 and 2015 is an artifact due mainly to the presence in the "GSP" aggregate of some countries that currently are subject to the EBA or FTA regimes and are due to lack of detail in the GTAP dataset. The gap in sugar tariffs in the last row is explained mostly by the MAcMap database aggregation method (see Appendix D for details).

On average, the 2007 tariffs related to the countries currently covered by the GSP were 0.26% for the "EBA" group, 1.04% for the FTA group, and 2.89%, for the GSP group. This indicates that the EBA tariffs applied to the LDCs is the most favorable within the GSP. Those countries eligible for the standard GSP tend to export commodities that attract low duties when imported in the EU. If MFN tariffs apply, the structure of these countries' exports (assumed here to be unchanged) is such that they would face a 4.2% average duty rate for the "EBA" aggregate, 4.6% for the "FTA" aggregate and 3.6% for the "GSP" aggregate respectively.

Average protection is higher for agricultural goods than industrial products. The EU sectors with the highest level of protection in 2007 were sugar and rice, with AVE tariffs between 50 and 105% for

¹⁸ The MFN tariffs faced by the various groups of developing countries appear different because of the aggregation method at product and country level in the MAcMap database (see Appendix D).

sugar and between 25% and 27% for rice.¹⁹ In 2007, tariffs on meat were particularly high for those countries classified in the FTA and the GSP groups (33% and 35% respectively). However, preferential tariffs for meat (ranked second after sugar) were lower than MFN tariffs for "GSP" and "FTA" countries.

Box 2. Measuring the global impact of preferential schemes for developing countries

To evaluate the economic impact of the trade preferences granted by the EU to developing countries, we use MIRAGE, a computable general equilibrium (CGE) model of the world economy, developed by CEPII (Fontagné et al., 2013; Decreux and Valin, 2007). CGE models are used to provide a consistent analysis of agents' reactions to a new economic environment resulting from a policy shock, taking account of objectives and constraints. The general equilibrium framework ensures that prices and income feedbacks, and also market effects and interdependences across economies are accounted for. MIRAGE relies on the Global Trade Policy Analysis (GTAP) database (Narayanan et al., 2012) for social accounting matrices, and on MACMap-HS6 (Guimbard et al., 2012) for AVE tariff protection, measured at product level.

Before considering the counterfactual scenarios, we simulate a world economy business-as-usual growth path up to 2025, considered the "baseline simulation". The economic impact of the removal of the trade preferences granted by the EU to developing countries within the GSP is computed as the difference between a growth path that excludes these preferences, and the baseline.

The base year of our databases is 2007. The GSP experienced two reforms, in 2009 and 2014. The 2009 reform was mainly technical, removing preferences on certain products for specific countries or requiring the ratification and implementation of international conventions to apply GSP+. The 2014 reform reduced the number of beneficiaries as explained in section 2. Among the countries no longer eligible for GSP, 34 signed a preferential trade agreement covering substantially all preferences for trade in goods under the standard GSP (e.g. Euromed countries or country signatories to an EPA). In our simulations the latter are included in the "FTA" group. The remaining 20 countries are high and upper middle income countries. From 2014 they are subject to MFN duty when exporting to the EU. We updated the tariffs for sugar and rice within the EBA arrangement.²⁰ Changes decided in the 2014 reform are implemented after a transition period, whose length differs across provisions. In order to simplify the design of the baseline scenario, we assume that the 2014 reform is completely effective from the beginning of 2015. Thus, at the baseline, tariffs on imports from FTA countries move from GSP to duty free, to represent FTAs. We consider that FTAs imply full liberalization with no sensitive products. Tariffs on imports from GSP and EBA countries remain unchanged. We assume also that high and upper middle income countries which left the GSP scheme in 2014 are subject to MFN tariffs.

We build a policy scenario in which trade preferences granted by the EU27 to developing countries are removed. All the preferential tariffs granted to "EBA", "FTA" and "GSP" groups in our model are replaced by MFN tariffs in 2015.

In the simulations, we consider 10 regions and 24 sectors - 13 agriculture,²¹ 1 energy, 8 industry²² and 2 services sectors.²³ Details on regional and sectoral aggregations are given in Appendix A.

¹⁹ Note that in 2007, under the EBA there were still some transition tariffs on rice. Protection under the EBA ended in 2009.

²⁰ The 2014 reform of the GSP adds 15 tariff lines to the GSP and changes the status of 8 others within the GSP regime but in our baseline simulation we consider only the changes to the list of beneficiaries caused by these reforms, and the elimination of transitional tariffs under the EBA.

²¹ Animal products, beverages and tobacco, cattle, plant fibers, fishing, forestry, fruit and vegetables, grains, meat, oil seeds, rice, sugar and vegetable oil.

²² Chemicals, clothing, electronic equipment, other equipment, metals, minerals, other manufactures and vehicles.

3.2. The impact of preferences on developing countries' exports to the EU

In the central counterfactual scenario, removal of the various sets of trade preferences granted by the EU to developing countries leads to a modest (-3%) decrease in exports from developing countries to the EU27. This suggests that the economic value of the EU preferential regimes for developing countries as a whole is rather small.

However, this aggregate figure hides a heterogeneous impact at the country group level. The impact is higher in the "EBA" and "FTA" country groups; their exports decrease by 18% and 17% respectively on average, compared to the baseline (see table 3). This is very significant. Exports to the EU27 represent a large share of these regions' total exports of (22% and 24% respectively). Exports from countries in the aggregate "GSP" group face a smaller reduction (-0.8%). This suggests that because the GSP preferential margins are limited, and the initial export flows are already constrained by relatively high tariffs, hypothetical removal of the standard GSP regime would be painful for the countries in the "GSP" aggregate. It suggests also that for a particular country, eligibility for the regular GSP or the EPA makes a significant difference. This is particularly interesting since if the ongoing negotiations with those ACP countries that have not yet concluded an EPA fail to be ratified (a real threat in the case of Central Africa), countries in the same African region could fall into the GSP or the EBA (or MFN) regimes.

Trade flows other than those from developing countries to EU27 are also affected in the counterfactual scenario. Exports from the "EBA" and "FTA" aggregates to countries other than the EU27 increase by 2% and 3% respectively (see table 3). The increase in exports from these two aggregates is directed primarily to the "GSP" group and North America. However, the trade patterns of the "GSP" group countries do not change significantly. EU import flows from countries other than those in the "EBA", "FTA" and "GSP" groups, increase by 0.6%. Overall, the diversion effects are limited at this aggregate level.

²³ Transportation and other services.

Table 3: Long term impact of a removal of preferential schemes for developing countries on bilateral exports (expressed as a percentage).

Exporter	Importer	Total	Agriculture	Energy	Industry	Services
EBA	EU27	-18.2	-47.3	2.2	-28.1	3.6
FTA	EU27	-17.2	-58.3	0.6	-18.3	3.4
GSP	EU27	-0.8	-10.9	-1.5	-0.8	0.8
EBA	World - EU27	2.1	3.2	1.2	3.6	2.9
FTA	World - EU27	3.2	2.4	2.1	3.5	2.7
GSP	World - EU27	0.1	-0.3	0.1	0.0	0.1
World - (EBA+FTA+GSP)	EU27	0.6	2.5	0.4	0.6	0.2
EBA	World	-2.1	-12.7	1.2	-7.7	3.2
FTA	World	-1.6	-22.6	1.8	-0.5	2.9
GSP	World	-0.1	-1.6	-0.2	-0.1	0.4
World	EU27	-0.3	-2.6	0.1	-0.3	0.4

Note: Trade in volume, percentage deviation from the baseline in 2025.

Removing EU trade preferences granted to developing countries has heterogeneous effects across sectors. In the three country groups considered, the most heavily affected sector is agriculture where exports decrease at -47% for the "EBA" aggregate, -58% for the "FTA" group and at -11% for the "GSP" group. Manufacturing sector exports are also affected, especially in the "EBA" and "FTA" aggregates, where they fall by 28% and 18% respectively. The preferential margin is greater in the agricultural sector due to higher MFN tariffs in the EU. This explains why a shift back to MFN has more impact than in other sectors. In addition, in developing countries and especially those in the "EBA" group agricultural exports often represent comparative advantage (table 4).

If we consider the "EBA" aggregate, the sectors that are most affected by the removal of preferences are sugar (-78% in exports, i.e. USD -1.6 billion), rice and beverages and tobacco (-32% in exports, i.e. USD -0.6 billion). While there is a significant impact on meat in percentage terms, EU sanitary barriers mean that export flows are very small (table 4). The results for the industry sector are driven by the sizeable decrease in clothing sector exports.

In the "FTA" aggregate, sugar and meat are often considered sensitive products by the EU27 and can be subject to tariffs even under FTAs. In addition, sanitary restrictions often radically reduce access to the EU market for animal products. Very few developing countries are certified as Foot and Mouth and African swine fever free which means very few can export meat products to the EU. Note that table 4 excludes sensitive products for those countries that left the GSP regime for a FTA, meaning that the results presented are an upper bound in relation to the benefits of preferential trade for the "FTA" group, especially in the case of sugar and meat. (Appendix B considers an alternative scenario regarding sensitive products.)

In the "GSP" aggregate, the large drop in exports in percentage terms corresponds to the small quantities traded initially. The only significant loss in the scenario is related to the beverages and tobacco sector which represents around 2% of this group's total exports. Were those countries in the "GSP" aggregate subject to MFN tariffs, their beverages and tobacco exports would decrease by 16% of USD2 billion. In absolute terms, the industries most affected are chemicals, , equipment and clothing which are the leading export sectors in the region (representing 5%, 13% and 16% of total exports by volume respectively). Energy exports, which represent 17% of total exports for the "GSP" aggregate are also affected. In relative terms, there would be significant increases in sugar and rice exports but these are very small exporting sectors.

Table 4: Detailed impacts on exports to EU27.

Sector	EBA				FTA				GSP			
	Value 2007 (10 ⁶ USD)	Sector (%)	Variation (10 ⁶ USD)	Variation (%)	Value 2007 (10 ⁶ USD)	Sector (%)	Variation (10 ⁶ USD)	Variation (%)	Value 2007 (10 ⁶ USD)	Sector (%)	Variation (10 ⁶ USD)	Variation (%)
AnimProd	61	0.22	-12	-6.34	397	0.32	-918	-55.19	1 538	0.26	-272	-13.03
BevTobOth	1,486	5.39	-583	-31.63	5 439	4.36	-2658	-31.06	11,872	2	-2046	-15.87
Cattle	17	0.06	-15	-83.03	15	0.01	-18	-85.4	51	0.01	-51	-59.82
Chemistry	501	1.82	-40	-2.84	5 836	4.68	-1799	-18.33	29 826	5.02	-3091	-4.1
Clothing	7 706	27.96	-8458	-49.87	11,438	9.17	-8877	-46.37	80 975	13.64	-2275	-1.08
Electronic	50	0.18	-7	-3.56	3 010	2.41	-1872	-32.59	79 798	13.44	934	0.43
Energy	4 998	18.13	194	2.24	13 921	11.17	111	0.6	100 409	16.91	-2627	-1.53
Equipment	157	0.57	-33	-5.22	10 428	8.36	-1373	-6.99	59 753	10.06	-2645	-1.43
Fibers	81	0.3	6	10.99	91	0.07	4	4.95	225	0.04	3	2.24
Fishing	117	0.42	-4	-20.96	349	0.28	-32	-19.38	213	0.04	-9	-7.49
Forestry	202	0.73	1	3.53	170	0.14	1	1.72	886	0.15	3	0.65
FV	284	1.03	-28	-14.65	4 286	3.44	-1769	-35.28	3 988	0.67	-262	-16.63
GrainsOth	1,512	5.48	-193	-22.9	2 573	2.06	-112	-5.57	5 362	0.9	-153	-6.57
Meat	33	0.12	-71	-96.42	267	0.21	-4071	-94.89	894	0.15	-116	-8.9
Metals	2 382	8.64	-372	-5.51	10 784	8.65	-548	-2.72	21,719	3.66	-38	-0.06
Minerals	1,929	7	63	1.7	8,377	6.72	-110	-0.8	13,734	2.31	-176	-0.74
Oilseeds	43	0.16	2	8.45	57	0.05	6	11.16	942	0.16	23	4.98
OthManuf	248	0.9	15	2.38	4,315	3.46	-498	-6.65	62,935	10.6	-186	-0.1
Rice	31	0.11	-225	-71.86	63	0.05	-160	-65.77	704	0.12	122	16.79
Serv	3,066	11.12	370	3.87	20,558	16.49	1,301	3.59	73,438	12.37	1,321	0.9
Sugar	240	0.87	-1,562	-77.83	558	0.45	-6,632	-91.27	349	0.06	91	18.53
Transport	1,841	6.68	139	3.14	13,951	11.19	591	3.07	28,512	4.8	400	0.66
VegOil	56	0.2	-5	-7.02	528	0.42	-2,817	-81.19	2,322	0.39	-5	-0.25
Vehicles	523	1.9	-100	-6.6	7,263	5.83	-5,433	-33.61	13,358	2.25	-687	-1.85
Total	27,562	100	-10,919	-18.17	124,676	100	-37,683	-17.22	593,803	100	-11,742	-0.83

3.3. Aggregate impact of EU preferences

Compared to the current situation, the removal of EU trade preferences for developing countries would result in losses for the poorest countries. The magnitude of these losses allows us to assess the economic "value" of the current schemes. In our scenario, the "EBA" and "FTA" aggregates defined in section 3.1 would experience annual GDP losses of, respectively, 0.25% and 0.16% compared to the baseline (see table 5 for 2025 figures). This corresponds respectively to USD2 billion and USD5 billion losses in national income.²⁴ GDP losses for those countries in the "GSP" aggregate are much smaller in percentage terms (-0.02%) but still amount to some USD5 billion. These figures suggest that the impact of EU preferential access is valuable for developing countries as a whole. With the exception of the agricultural sector, where EU production would benefit from the removal of preferences granted to developing countries, there is only a small impact on EU GDP. In the agricultural sector, the gains in value added in the EU amount to USD7billion, while the losses in the EBA, FTA and GSP groups are respectively USD1.1 billion, USD8.5 billion and USD1.5 billion.

Table 5: Impact of the preference removal scenario on GDP and sectoral value added.

Countries group	GDP	Value Added			
		Agriculture	Energy	Industry	Services
EBA	-0.25	-0.8	0.92	-2.06	0.08
FTA	-0.16	-2.85	1.04	0.48	0.04
GSP	-0.02	-0.07	-0.01	0.00	0.00
EU27	-0.01	1.12	-0.28	-0.12	-0.01

Note: Volume, percentage deviation from baseline in 2025.

3.4. An alternative regional analysis

So far, we have aggregated countries according to the preferential trade regime that applies to their exports to the EU. Our scenario results show the effects on countries facing different types of preferential regimes. However, they show a very imperfect geographical distribution of these impacts. For instance, 34 of the 49 "EBA" countries are located in Africa, 9 in Asia, 5 in the Pacific area and 1 in the Caribbean. The "GSP" group countries are located mostly in Latin America and Eastern Europe, with a few in Africa and Asia. Most of the "FTA" aggregate group are Africa, the exceptions being Mexico and the Caribbean islands which have signed a partnership agreement with the EU. Since preferential margins are larger under the EBA and FTAs than under the GSP, it is expected that

²⁴ All values are expressed in 2007 US dollars.

the removal of EU trade preferences would impact primarily on the poorest countries in Africa and Asia.

We run the same policy scenario as before but with a different regional aggregation built on geographical criteria, that is, 16 regions as detailed in annex A. We calculate a new average EU tariff for the various country groups (weighted by the trade of the reference group, see footnote 17). The figures for the new regional mappings are presented in table 6. Average tariffs appear relatively low, the maximum is 8.8% faced by Oceania, while for some regions tariffs are close to zero, for example, the Middle East and Sub-Saharan and North Africa. As before, agriculture is more protected than other sectors in the EU.

When considering the removal of European trade preferences, the regions whose exports suffer from the largest tariff increases are Africa but also Latin America, due to the impact of GSP+ and FTAs. In our scenario, the rise in tariffs is substantial in the agricultural sector and is the sector where exports decrease the most. Agricultural exports drop by 57% in North Africa, 55% in Sub-Saharan Africa, 23% in Latin America and 12% in developing Asia (table 7). Exports of agricultural products represent a large share of exports to the EU, especially for Latin America (20%) and Sub-Saharan Africa (16%). Total exports to the EU27 decrease by 6% and 10% respectively for these two regions. In Asian developing countries, exports of manufacturing products also decrease (industry tariffs move from 2.6% to 8.7%, inducing a drop of 28% in industrial exports which represent 54% of total regional exports to EU27, leading in turn, to a decrease in total exports to the EU27 of 14%).

Since the EU27 is often the major trade partner of the regions considered, total exports (i.e. to the world) from these regions are negatively impacted. North African countries' total exports decline by 3%. Those from rest of developing Asia and Sub-Saharan Africa also show a significant reduction. Table 8 shows that (with some exceptions) the decline in exports is often large enough to induce a decline in total production, and therefore, in sectoral value added. The removal of EU preferences is only partially compensated for by exports to other markets.

In brief, our simulations show that removal of current EU preferences for developing countries would result in significant economic losses for the poorest ones. This suggests that these preferential schemes have a limited impact overall but have significant benefits in specific regions such as Sub-Saharan Africa and North Africa, and specific sectors such as agriculture.

Table 6: Average tariff protection on EU27 imports - geographical regions.

Exporter	2007			2015 – Baseline			2015 – Scenario (MFN)		
	All	Agri.	Indus.	All	Agri.	Indus.	All	Agri.	Indus.
AfrNorth	0.45	10.81	0.03	0.11	0.54	0.27	2.10	18.17	4.37
ASEAN	2.04	11.42	1.42	2.34	11.78	1.75	3.30	15.01	2.61
ChinaHK	3.47	13.67	3.23	3.47	13.67	3.23	3.58	17.01	3.26
Dvd Asia	2.87	12.40	2.78	2.87	12.40	2.78	2.87	12.40	2.78
EFTA	0.26	5.85	0.00	0.26	5.85	0.00	0.26	5.85	0.00
India	3.05	13.20	2.10	3.05	13.20	2.10	4.73	15.78	3.70
Japan	4.04	11.67	4.00	4.04	11.67	4.00	4.04	11.67	4.00
LAC	1.51	9.84	0.11	1.29	7.54	0.37	3.99	17.92	2.81
Mercosur	5.45	16.33	0.68	6.20	16.99	1.54	6.21	17.00	1.54
MiddleEast	0.33	12.55	0.60	0.68	13.53	1.96	0.78	15.54	2.23
Nafta	2.98	13.22	2.46	2.79	11.68	2.36	3.74	14.24	3.27
Oceania	8.83	32.88	1.67	8.63	32.05	1.67	8.93	33.18	1.72
OtherEur	0.76	7.65	0.72	1.11	8.55	1.24	1.20	8.88	1.35
RoDvpgA	3.07	8.37	2.50	3.16	7.86	2.65	9.11	12.80	8.72
SSA	0.61	6.07	0.15	0.03	0.20	0.02	1.99	13.27	2.00

Note: *Ad valorem* equivalent, in percent.

Table 7: Long term impact of the preference removal scenario on bilateral exports (expressed as percent change relative to the 2015 baseline) - geographical regions.

Exporter	Importer	Total	Agriculture	Energy	Industry	Services
AfrNorth	EU27	-8.88	-57.16	1.88	-25.36	5.16
ASEAN	EU27	-3.02	-4.18	-1.11	-5.13	0.94
ChinaHK	EU27	1.64	-9.00	-11.13	1.96	0.48
Adv Asia	EU27	1.43	2.67	1.27	1.59	0.54
EFTA	EU27	0.56	1.79	0.22	0.85	0.22
EU27	EU27	0.37	2.18	-0.29	0.32	-0.11
India	EU27	-4.09	-3.53	-22.20	-6.38	1.35
Japan	EU27	1.42	2.85	1.14	1.61	0.56
LAC	EU27	-5.80	-23.19	0.48	-7.76	1.46
Mercosur	EU27	2.22	5.53	1.17	1.25	0.50
MiddleEast	EU27	0.70	-1.44	1.39	-0.14	0.72
Nafta	EU27	-1.56	-3.66	0.93	-2.73	0.84
Oceania	EU27	0.93	1.54	1.11	1.01	0.61
OtherEUR	EU27	0.82	4.49	0.36	1.11	0.27
RoDvpgA	EU27	-14.33	-11.90	-17.68	-28.04	3.48
SSA	EU27	-10.49	-54.58	1.65	-7.75	2.93
AfrNorth	World	-3.27	-35.46	1.97	-12.79	4.67
ASEAN	World	-0.17	-0.25	0.08	-0.3	0.44
ChinaHK	World	0.11	-1.52	-1.73	0.18	-0.08
Adv Asia	World	0.05	-0.01	-0.21	0.08	-0.04
EFTA	World	0.07	0.63	-0.02	0.14	-0.16
EU27	World	-0.35	0.72	-0.76	-0.39	-0.53
India	World	-0.54	-0.77	-2.33	-0.78	0.85
Japan	World	0.08	-0.01	-0.28	0.11	-0.06
LAC	World	-0.5	-5.45	0.38	-0.2	0.98
Mercosur	World	0.04	0.21	-0.28	-0.02	0.01
MiddleEast	World	-0.07	-0.66	-0.05	-0.18	0.21
Nafta	World	-0.2	-0.48	0.05	-0.33	0.26
Oceania	World	-0.02	-0.07	-0.14	0.01	0.04
OtherEUR	World	0.04	0.03	-0.12	0.24	-0.15
RoDvpgA	World	-2.33	-0.49	1.56	-7.15	2.98
SSA	World	-1.34	-21.25	0.77	-0.57	2.43

Note: Trade in volume, percentage deviation from the baseline in 2025.

Table 8: Impact of the preference removal scenario on GDP and sectoral value added-geographical regions.

Country	GDP	Value Added			
		Agriculture	Energy	Industry	Services
AfrNord	-0.28	-2.60	1.27	-1.90	0.24
ASEAN	0.00	-0.07	0.03	-0.22	0.00
ChinaHK	0.01	0.00	-0.11	0.04	0.00
Adv Asia	0.00	-0.01	-0.15	0.06	-0.01
EFTA	0.00	0.20	-0.02	0.14	-0.02
EU27	-0.01	1.07	-0.29	-0.09	-0.02
India	-0.09	-0.07	-0.15	-0.08	-0.01
Japan	0.00	-0.01	-0.12	0.05	0.00
LAC	-0.05	-0.72	0.25	0.14	0.02
Mercosur	0.00	0.05	-0.13	0.00	0.00
MiddleEast	-0.03	-0.12	-0.03	0.00	-0.01
Nafta	0.00	-0.08	0.02	-0.01	0.00
Oceania	-0.01	-0.02	-0.06	0.03	0.00
OtherEUR	0.00	0.03	-0.07	0.15	-0.02
RoDvpgA	-0.17	-0.24	1.12	-2.63	0.15
SSA	-0.28	-1.74	0.57	0.38	-0.06

Note: Volume, percentage deviation from baseline in 2025.

4. Impact of EU preferences on food security

The 1996 World Food Summit defined food security as: "a state in which people at all times have physical, social and economic access to sufficient and nutritious food that meets their dietary needs for a healthy and active life". This definition underlines the multidimensionality of food security and has led to the widely acknowledged four pillars of food security: availability, accessibility, utilization and stability. Numerous indicators, sometimes part of composite indexes, have been developed to monitor food security and to quantify its short and long term drivers in order to help policy makers. Pangaribowo et al. (2013) review these indicators, identifying the most frequently used ones and propose a classification for them. The authors add three more scales (individual, household and macro level) to the four dimensions of food security. They distinguish indicators of food security outcomes, intervention and drivers. They identify the following indicators as best describing food and nutrition security for a given region: per capita total amount of net calories available in a given country (availability); net share of energy supply (calories) derived from cereals, roots and tubers (availability); average supply of protein derived from animal sources (availability); average share of expenditure on food in total household expenditure (accessibility); prevalence rate of undernourished people (accessibility); depth of food deficit (accessibility); prevalence rate of stunting among children under 5 years (utilization); prevalence rate of underweight among children under 5 years (utilization); diet diversity score (utilization); prevalence of overweight and obese adults (utilization); prevalence

rate of anemia among women of reproductive age and children under 5 years (utilization); per capita food supply variability (stability); and domestic food price volatility (stability).

Among the indicators of Food and Nutrition Security surveyed by Pangaribowo et al. (2013), there are two widely used sets of data and indexes - those developed by the Food and Agriculture Organization (FAO), and the Global Food Security Index (GFSI - described in EIU, 2014). The FAO's indicators are a compromise between expert judgment, data availability and theoretical consistency. The indicators are classified along the four dimensions of food security. The FAO reports the main indicators in a single database with the aim of building a wide ranging food security information system. The GFSI has more limited country coverage but more up to date data. It is, however, a "second hand" dataset that relies on other primary sources. The core GFSI index builds on existing food security research and frameworks, including the annual State of Food Insecurity in the FAO's World Report, the International Food Policy Research Institute's (IFPRI) Global Hunger Index, and the Maplecroft Food Security Risk Index, among others.

4.1. Food insecurity indicators

African ACP countries are among the lowest ranked in the GFSI, evaluated at 35/100 in 2014 (EIU, 2014) compared to the world average of 56 and the North America and Europe average of over 75. Similarly, the FAO indicates that the Sub-Saharan African region has the highest prevalence of hunger (FAO, 2013). Table 9 shows that ACP countries have a high dependency on imports for food security. For half of ACP countries, food imports amount to more than 25% of the value of their total exports and this value is more than 75% for ten ACP countries. African countries lack irrigation equipment and systems to increase their domestic production and many countries face water shortages. In some cases, such as small islands in the Pacific, lack of arable land constitutes part of the problem.

Table 9: Food Security Indicators in different regions.²⁵

Region	Cereal import Dependency Ratio			Percent of Arable land Equipped for Irrigation			Value of Food Imports in Total Merchandise Exports		
	1990- 1992	1999- 2001	2007- 2009	1990- 1992	1999- 2001	2007- 2009	1990- 1992	1999- 2001	2007- 2009
Africa	26.9	29.8	30.1	6.5	6.6	6.1	13.0	12.0	10.0
Asia	9.7	10.0	10.0	34.5	41.1	47.2	6.0	4.0	4.0
Caribbean	78.9	76.6	77.3	23.1	23.0	22.7	19.0	23.0	20.0
Latin America	20.0	28.4	28	12.4	12.8	13.3	8.0	8.0	6.0
Oceania	96.1	98.1	101.8	1.6	2.8	2.7	20.0	17.0	18.0
World	14.6	15.2	15.7	18.4	20.6	22.5	7.0	5.0	5.0

Source: FAOSTAT yearbook 2013.

FAOSTAT and GFSI data show that food security has improved in several ACP countries over time. In the best cases, food affordability has increased thanks to economic growth and rising incomes which has led to a virtuous cycle of income distribution and investment. In such cases, agriculture, historically neglected by governments, has become a higher priority (Anderson et al., 2013). However, in other countries the situation has worsened, particularly in countries involved in religious, ethnic or political conflicts. In addition, several indicators suggest that the majority of ACP countries remain quite vulnerable as far as food security is concerned; the share of food in household expenditure is much larger than in other regions (table 10).

Table 10: Main GFSI indicators for selected group of countries.

Indicator	ACP countries	EAC	West Africa	All countries	North America	Europe
AFFORDABILITY	28.1	28.4	28.6	55.7	83.6	80.3
Food consumption as a share of household expenditure	33	32.6	34.5	57.3	89.3	82.3
Proportion of population under global poverty line	26	16.9	29.2	70.9	98.4	99.8
Gross domestic product per capita (PPP)	3	1.4	1.9	23.2	56.5	46.9
Agricultural import tariffs	76	71.5	78.9	77.5	80.4	78.3
Presence of food safety net programs	31	45.0	29.5	64.7	91.7	94.2
Access to financing for farmers	24	35.0	22.7	58.7	91.7	91.3
AVAILABILITY	41.2	40.7	42.1	55.8	76.7	69.8
Sufficiency of supply	32	20.4	43.3	59.0	87.0	84.9
Average food supply	32	20.6	44.2	56.0	82.3	80.1

²⁵ Cereal Import Dependency Ratio (%): Cereal imports / (cereal production + cereal import - cereal export); Percentage of Arable Land Equipped for Irrigation (%): Land equipped for irrigation / arable land; Value of Food Imports over Total Merchandise Exports (%): Value of food imports / value of total exports.

Dependency on chronic food aid	33	20.0	40.9	67.4	100.0	98.1
Public expenditure on agricultural R&D	11	20.0	5.7	14.9	50.0	23.6
Agricultural infrastructure	27	26.3	25.3	54.2	80.2	75.5
Existence of adequate crop storage facilities	37	40.0	27.3	78.9	100.0	100.0
Road infrastructure	22	20.0	20.5	42.2	66.7	64.4
Port infrastructure	27	25.0	29.5	52.5	83.3	73.1
Political stability risk	35	37.8	36.9	49.2	77.8	69.0
Corruption	18	25.0	13.6	33.9	66.7	59.6
Food loss	59.9	69.5	51.5	75.8	85.9	88.2
OVERALL SCORE	35.2	35.7	35.8	56.1	80.0	75.4

Note: The GFSI studied every EAC-EPA member states and 11 out of the 15 Western African members. A high score

reflects a good performance on the indicator (Source: GFSI 2014).

4.2. Simulations of the impact of EU preferences on food consumption

Because they are not associated with household level data and analysis, our simulations do not allow us to account for households' heterogeneity, which is a key determinant of food security.²⁶ This is a major limitation of our approach which is aimed mostly at providing macro determinants for a regional analysis using microeconomic data. Nevertheless, simulations using the MIRAGE model can shed light on the impact of EU trade preferences on food security.

The removal of trade preferences has consequences for developing countries' total revenues. We observe a decrease in GDP - mostly in North and Sub-Saharan Africa but also in the Rest of Developing Asia region (-0.28% in the two African regions and -0.17% in the Asian region). A decrease in GDP could undermine food security, limiting the income available to households, and therefore their access to food. In our scenario, the impact is partially offset by a decrease in food prices in North Africa and Sub-Saharan Africa (see Table 11). These two effects result in a slight increase in the share of expenditure devoted to food purchases which amounts to 0.06% for North Africa, and in the Rest of Developing Asia is too small to be significant.

In relation to food availability, there is a decrease in the volume of food produced locally (e.g. -3.5% and -2.4% in North and Sub-Saharan Africa),²⁷ and imports exemplified by the decrease in the cereal import ratio (-2.3% in North Africa, -2.4% in Sub-Saharan Africa and -1.5% in the Rest of Developing Asia group).²⁸ This results in a slight reduction in final consumption of 0.6% in North Africa, 0.12% in Sub-Saharan Africa and 0.22% in the Rest of Developing Asia. These changes are

²⁶ Preferences across sectors are represented by a LES-CES (linear expenditure system - constant elasticity of substitution) function, calibrated on initial (i.e. 2007) data. Using this function, the elasticity of substitution across sectors is constant only above a minimum level of consumption for each sector.

²⁷ Food production in the countries considered is mainly consumed locally. Therefore, even if food exports show sizeable relative changes (e.g. -37% in North Africa), they do not drive the variation in food consumption.

²⁸ The decrease in cereal import ratios is caused by a larger decrease in imports than in total consumption.

small in relative terms but mainly affect regions with the largest undernourished populations and the highest prevalence of undernourishment (FAO, 2015), that is, Sub-Saharan Africa and in the Rest of Developing Asia group (RoDvpgA in table 11). Table 12 shows that, in many developing countries, the main impacts occur in the consumption of grain and oil seeds (e.g. for consumption of cereals and vegetable oils -0.37% and -0.21% in North Africa, and -0.14% and -0.08% in Sub Saharan Africa).

Table 11: Selected indicators of the impact of EU preferences on food security.

Indicator	Region								
	AfrNord	ASEAN	India	LAC	Mercosur	Oceania	OtherEur	RoDvpgA	SSA
ACCESSIBILITY									
GDP	-0.28	-0.08	-0.09	-0.05	0	-0.01	0	-0.17	-0.28
Food price index	-1.02	-0.15	-0.22	-0.29	0	-0.03	0.05	-0.68	-0.82
Food expenditures	0.06	0.01	0.01	0	0	0.01	0	0.06	0.02
AVAILABILITY									
Food production	-3.48	-0.07	-0.07	-0.64	0.08	-0.01	0.07	-0.16	-2.38
Cereal import ratio	-2.35	-0.19	-0.5	-0.76	0.15	0.26	0.10	-1.52	-2.09
Final food cons.	-0.60	-0.05	-0.07	-0.04	0.01	-0.01	-0.01	-0.22	-0.12

Note: Percentage deviation from the baseline in 2025. *Food price index* is a Fisher index, *Food expenditures* is the share of food expenditure in total expenditure in final consumption, *Food consumption* is total consumption (final + intermediary) in volume, *Cereal import ratio* is equal to total imports of cereals over total consumption of cereals, and *Food import ratio* is equal to food imports over total exports, following FAO (2015) and EIU (2014).

Table 12: Impact of the preference removal scenario on food consumption per capita on selected developing countries (percentage change)

Region	Animal products	Cereals	Vegetable oil and oilseeds	FV	Beverages, Tobacco, Sugar and others
AfrNord	-0.33	-0.37	-0.21	0.06	-1.08
ASEAN	-0.03	-0.02	-0.06	0.00	-0.07
ChinaHK	0.01	0.02	0.03	0.03	0.02
Dvd_Asia	0.01	0.02	0.00	0.01	0.02
India	-0.05	-0.08	-0.10	-0.05	-0.09
LAC	-0.04	-0.02	-0.05	0.11	-0.07
Mercosur	0.01	0.02	-0.01	-0.04	0.00
MiddleEast	-0.01	0.01	-0.03	-0.01	-0.05

OtherEur	0.00	0.02	-0.02	-0.03	-0.02
RoDvpgA	-0.13	-0.27	-0.31	-0.21	-0.32
SSA	-0.06	-0.14	-0.08	0.01	-0.22

Note: Volume, percentage deviation from the baseline in 2025.

5. Conclusion

Trade can play a considerable role in development. It has been documented that sudden liberalization can disrupt supply and lower producer prices, resulting in a vicious circle where farmers shift to subsistence farming.²⁹ However, more export opportunities for farmers are a source of income and growth. While this was the source of much debate in the 1970s and 1980s, there is no concrete evidence that agricultural export have a negative impact on local supply and consumption of staple foods. Exports of staples provide resources to purchase capital and innovative content inputs (e.g. seeds, machinery). Insertion in export markets remains a unique way to embark on capital accumulation and the development of productive forces.

The set of EU preferences is intended to provide export opportunities to the poorest countries. Initially, they involved a set of non-reciprocal schemes. Recently, traditional preferences with the ACP countries have evolved towards association agreements linked to reciprocal trade arrangements, with revised GSPs focused on the poorest countries.

In order to gauge the economic impact of the EU trade preferences for developing countries, we compared the current set of preferential trade arrangements for developing countries to a counterfactual simulation with all these preferences removed. The simulations (and sensitivity analyses) took account as much as possible of recent changes in preferential regimes based on detailed bilateral data on applied tariffs.

The simulations suggest that EU trade preferences granted to developing countries do matter. In terms of GDP, the long term impact appears significant for North and Sub-Saharan African countries, with the removal of the EU preferences resulting in a fall exceeding 0.25 percentage points. The removal of preferential access undoubtedly would lead to some reallocation of the trade that would be diverted, but for the EBA countries, would result in the loss of several billion euros-worth of exports.

²⁹ A well-known example is the sudden trade liberalization that took place in the Haitian rice market. Former US President Clinton, whose administration pushed Haiti to make dramatic cuts to rice tariffs in the 1990s, acknowledged publicly that this had destroyed Haiti's rice production: "I had to live everyday with the consequences of the loss of capacity to produce a rice crop in Haiti to feed those people because of what I did; nobody else" (speech at the Senate Foreign Relation Committee, March 10, 2010).

In relation to food security, the preferences granted to the LDCs, and the bilateral agreements with some North African countries are less visible in our aggregate approach.

Elements of the macroeconomic model we used allows assessment of the impact on production, imports, exports and welfare by sector. However, these results should be enhanced with microeconomic simulations on areas where detailed household survey data are available in order to assess the impacts on food security which is as much a function of wealth distribution as total wealth.

References

- Anania, G., Matthews, A., Olper, A., Psaltopoulos, D., Sarris, A., Skuras, D. & Penglis, E. (2014). Evaluation of preferential agricultural trade regimes, in particular the economic partnership agreements. *Kantor Management Consultants and European Commission*.
- Anderson, K. (2004). Subsidies and Trade Barriers. In *Global Crises, Global Solutions* Edited by Bjorn Lomborg, The Copenhagen Consensus, Cambridge University Press, pp 541-577.
- Anderson, K., Rausser, G., & Swinnen, J. (2013). Political Economy of Public Policies: Insights from Distortions to Agricultural and Food Markets. *Journal of Economic Literature*, 51(2), pp. 423-77.
- Bouët, A., Decreux, Y., Fontagné, L., Jean, S. & Laborde, D. (2008). Assessing applied protection across the World. *Review of International Economics*, 16(5), pp. 850–863.
- Brenton, P. (2003). The Value of Trade Preferences: The Economic Impact of Everything but Arms, mimeo, World Bank, Washington DC.
- Brenton, P., & Ikezuki, T. (2004). The impact of agricultural trade preferences with particular attention to the least developed countries. In *World Bank, Global Agricultural Trade and Developing Countries*. World Bank, Washington DC.
- Bureau, J.-C., Chakir, R. and Gallezot, J. (2007). The Utilization of trade Preferences for Developing Countries in the Food Sector. *Journal of Agricultural Economics*, 58(2), pp. 175-198.
- CIDSE (2008). Agriculture in Regional Trade Agreements: A Comparative Analysis of United States and European Union Agreements.
- Decreux, Y., & Valin, H. (2007). MIRAGE, Updated Version of the Model for Trade Policy Analysis - Focus on Agriculture and Dynamics. *Technical Report 15, CEPII*.
- EIU (Economist Intelligence Unit) (2014). Global Food Security Index 2014 data, available at <http://foodsecurityindex.eiu.com/>.
- European Commission (2013). Memo: Revised EU trade scheme to help developing countries applies on 1 January 2014. *Brussels, 19 December 2013*.
- European Commission (2014). The European Union's Generalised System of Preferences (GSP).
- FAO (2013). The State of Food Insecurity in the World 2013 - The multiple dimensions of food security. *FAO, IFAD and WFP*.
- FAO (2015). The State of Food Insecurity in the World 2015 - Meeting the 2015 international hunger targets: taking stock of uneven progress. *FAO and IFAD and WFP*.
- Fontagné, L., Fouré, J., & Ramos, M.-P. (2013). MIRAGE-e: A General Equilibrium Long-term Path of the World Economy. *Working Papers 2013-39, CEPII*.
- Fontagne, L., Laborde, D. & Mitaritonna, C. (2010). An Impact Study of the Economic Partnership Agreements in the Six ACP Regions *Journal of African Economies, Oxford University Press (OUP)*, 20, pp. 179-216.
- Francois, J., Hoekman, B., Manchin, M. (2006). Preference erosion and multilateral trade liberalisation. *World Bank Economic Review*. 20, pp. 197–216.
- Gallezot, J., Bureau, J.-C. (2005). Preferential trading arrangements in agricultural and food markets. *OECD, Organisation de Coopération et de Développement Economique, Paris*, p. 53.
- Guimbard, H., Jean, S., Mimouni, M., & Pichot, X. (2012). MAcMap-HS6 2007, an exhaustive and consistent measure of applied protection in 2007. *CEPII*.
- Inama S. (2004). Utilization of Preferences. UNCTAD Secretariat, Geneva (United Nations).

Narayanan, G., Badri, A., & McDougall, R. (2012). Global Trade, Assistance, and Production: The GTAP8 Data Base. *Technical report, Center for Global Trade Analysis, Purdue University.*

Panagariya, A. (2002). EU Preferential Trade Arrangements and Developing Countries. *The World Economy* 25(10), pp. 1415-1432.

Pangaribowo, E., Gerber, N., & Torero, M. (2013). Food and nutrition security indicators: a review. *Working paper 05, Foodsecure, The Hague.*

Appendix A. Regional and sectoral aggregation

In the simulations, we consider 10 regions and 24 sectors (table A.1). Countries currently benefiting from the Everything but Arms regime are in the "EBA" group. Countries under the GSP regime in 2007 but which - following the 2014 reform - have exited or will exit this regime because they have signed a free trade agreement with the EU27 (e.g. Economic Partnership Agreements) are in the "FTA" aggregate. Countries that were under the standard GSP regime in 2007 and remained under this regime after the 2014 reform are in the "GSP" aggregate. However, many developing countries are not considered individually in the GTAP 8 database but are included within larger geographical groups. In most cases, if a GTAP region includes a country that benefits from preferences under the European General Scheme of Preferences, the whole region is classified as belonging to the regional aggregate we name "GSP" regardless of whether it includes developing countries with different eligibility (EBA, GSP or FTA). The exceptions to this are the GTAP aggregate "Western Africa" (26 countries) which is included in our EBA group although this leads to misclassification in two cases: Cape Verde which falls under the standard GSP regime, and Saint Helena, Ascension and Tristan Da Cunha which have signed FTAs with the EU. The second exception is the GTAP region "Caribbean" (22 countries) which is categorized under FTA although Haiti is subject to the EBA regime, and Cuba and Puerto Rico do not benefit from European trade preferences. Tables A.2 and A.3 give more details on the treatment of geographical regions which are not disaggregated in GTAP8 and which include countries benefiting from European trade preferences. Classifying FTA and EBA countries as GSP leads to overestimation of the losses accruing to the GSP aggregate (moving from the EBA or FTA regime to MFN status generates higher losses than a move from GSP to MFN). Including an EBA country in the FTA group has more uncertain impacts on the evaluation of impacts, especially at sectoral level.

The results in section 3 are based on a regional aggregation built on geographical criteria rather than on a trade regime. This aggregation distinguishes 16 regions, detailed in Table A.4.

Table A.1. Sectoral nomenclature.

Sector	Description
AnimalProd	Animal products: milk, wool, silk, honey, eggs, skins
BevTobOth	Beverage and tobacco products, other prepared and preserved food
Cattle	Cattle
Chimestry	Chemical products and rubber and plastic products
Clothing	Textiles, wearing apparel and leather products
Electronic	Electronic equipment
Energy	Coal, electricity, gas, petroleum and coke
Equipment	Other equipment and machinery
Fibers	Plant fibres
Fishing	Fishing and fish farms
Forestry	Forestry
FV	Fruits and vegetables
GrainsOth	Wheat, other grains and other crops
Meat	Cattle meat and other meat
Metals	Iron and steel and non-ferrous metals
Minerals	Non metallic minerals and other mining
Oilseeds	Oil seeds
OthManuf	Lumber, paper and paper products, fabricated metal products and other manufacturing
Rice	Paddy and processed rice
Serv	Water, construction, trade, communication, insurance, financial services, business services, recreation, public services, ownership of dwellings and other services
Sugar	Sugar cane, sugar beet and sugar
Transport	Water transport, air transport and other transport
VegOil	Vegetable oils
Vehicles	Motor vehicles and transport equipment

Table A.2. Regional nomenclature.

Region	Description (GTAP regions)
Asia	Asia Hong Kong, Japan, Korea, Malaysia, Singapore, Taiwan, Rest of East Asia, Rest of Southeast
EBA	Bangladesh, Benin, Burkina Faso, Cambodia, Ethiopia, Guinea, Laos, Madagascar, Malawi, Mozambique, Nepal, Rwanda, Senegal, South Central Africa, Tanzania, Togo, Uganda, Zambia, Rest of Eastern Africa, Rest of Western Africa
EU27	Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom
FTA	Botswana, Cameroon, Caribbean, Côte d'Ivoire, Egypt, Ghana, Kenya, Mauritius, Mexico, Morocco, Namibia, South Africa, Tunisia, Zimbabwe
GSP	Armenia, Bolivia, Central Africa, China, Colombia, Costa Rica, Ecuador, El Salvador, Georgia, Guatemala, Honduras, India, Indonesia, Kyrgyzstan, Mongolia, Nicaragua, Nigeria, Pakistan, Panama, Paraguay, Peru, Philippines, Sri Lanka, Thailand, Ukraine, Viet Nam, Rest of former Soviet Union, Rest of North Africa, Rest of Oceania, Rest of South African Custom Union, Rest of South Asia, Rest of Western Asia
Latin America	Brazil, Chile, Uruguay, Venezuela, Rest of Central America, Rest of South America
Middle East	Bahrain, Iran, Israel, Kuwait, Qatar, Saudi Arabia, Turkey, United Arab Emirates
North America	Canada, USA, Rest of North America
Oceania	Australia, New Zealand
Rest of the World	Albania, Azerbaijan, Belarus, Croatia, Kazakhstan, Norway, Oman, Rest of Eastern Europe, Rest of EFTA, Rest of Europe, Rest of the World, Russian Federation, Switzerland

Table A.3. Details of regional aggregation - misclassified countries.

Country	(1)	(2)	Country	(1)	(2)
Caribbean			Rest of Oceania		
<i>Cuba</i>	<i>N/A</i>	<i>FTA</i>	<i>American Samoa</i>	<i>FTA</i>	<i>GSP</i>
<i>Haiti</i>	<i>EBA</i>	<i>FTA</i>	<i>Fiji</i>	<i>FTA</i>	<i>GSP</i>
<i>Puerto Rico</i>	<i>N/A</i>	<i>FTA</i>	<i>French Polynesia</i>	<i>FTA</i>	<i>GSP</i>
Anguilla	FTA	FTA	<i>Guam</i>	<i>FTA</i>	<i>GSP</i>
Antigua and Barbuda	FTA	FTA	Kiribati	EBA	GSP
Aruba	FTA	FTA	<i>New Caledonia</i>	<i>FTA</i>	<i>GSP</i>
Bahamas	FTA	FTA	<i>Northern Mariana Islands</i>	<i>FTA</i>	<i>GSP</i>
Barbados	FTA	FTA	<i>Palau</i>	<i>N/A</i>	<i>GSP</i>
Cayman Islands	FTA	FTA	<i>Papua New Guinea</i>	<i>FTA</i>	<i>GSP</i>
Dominica	FTA	FTA	<i>Pitcairn</i>	<i>FTA</i>	<i>GSP</i>
Dominican Republic	FTA	FTA	<i>Samoa</i>	<i>FTA</i>	<i>GSP</i>
Grenada	FTA	FTA	<i>Solomon Islands</i>	<i>EBA</i>	<i>GSP</i>
Jamaica	FTA	FTA	<i>Tokelau</i>	<i>FTA</i>	<i>GSP</i>
Montserrat	FTA	FTA	<i>Tuvalu</i>	<i>FTA</i>	<i>GSP</i>
Netherlands Antilles	FTA	FTA	<i>US Minor Outlying Islands</i>	<i>FTA</i>	<i>GSP</i>
Saint Kitts and Nevis	FTA	FTA	<i>Vanuatu</i>	<i>EBA</i>	<i>GSP</i>
Saint Lucia	FTA	FTA	<i>Wallis and Futuna</i>	<i>FTA</i>	<i>GSP</i>
Saint Vincent and the Grenadines	FTA	FTA	Cook Islands	GSP	GSP
Trinidad and Tobago	FTA	FTA	Marshall Islands	GSP	GSP
Turks and Caicos Islands	FTA	FTA	Micronesia Federated States of	GSP	GSP
Virgin Islands British	FTA	FTA	Nauru	GSP	GSP
Virgin Islands U.S.	FTA	FTA	Niue	GSP	GSP
Central Africa			Tonga	GSP	GSP
<i>Central African Republic</i>	<i>EBA</i>	<i>GSP</i>	Rest of South Africa Custom Union		
<i>Chad</i>	<i>EBA</i>	<i>GSP</i>	<i>Lesotho</i>	<i>EBA</i>	<i>GSP</i>
<i>Equatorial Guinea</i>	<i>EBA</i>	<i>GSP</i>	<i>Swaziland</i>	<i>FTA</i>	<i>GSP</i>
<i>Gabon</i>	<i>N/A</i>	<i>GSP</i>	Rest of South Asia		
<i>Sao Tome and Principe</i>	<i>EBA</i>	<i>GSP</i>	<i>Afghanistan</i>	<i>EBA</i>	<i>GSP</i>
Congo	GSP	GSP	<i>Bhutan</i>	<i>EBA</i>	<i>GSP</i>
Rest of Eastern Africa			Maldives	GSP	GSP
<i>Burundi</i>	<i>EBA</i>	<i>GSP</i>	Rest of Western Africa		
<i>Comoros</i>	<i>EBA</i>	<i>GSP</i>	<i>Cape Verde</i>	<i>GSP</i>	<i>EBA</i>
<i>Djibouti</i>	<i>EBA</i>	<i>GSP</i>	<i>Saint Helena, Ascension and TDC</i>	<i>FTA</i>	<i>EBA</i>
<i>Eritrea</i>	<i>EBA</i>	<i>GSP</i>	Benin	EBA	EBA
<i>Mayotte</i>	<i>FTA</i>	<i>GSP</i>	Burkina Faso	EBA	EBA
<i>Rwanda</i>	<i>EBA</i>	<i>GSP</i>	Gambia	EBA	EBA
<i>Seychelles</i>	<i>EBA</i>	<i>GSP</i>	Guinea	EBA	EBA
<i>Somalia</i>	<i>EBA</i>	<i>GSP</i>	Guinea-Bissau	EBA	EBA
<i>Sudan</i>	<i>EBA</i>	<i>GSP</i>	Liberia	EBA	EBA
Rest of North Africa			Mali	EBA	EBA
<i>Algeria</i>	<i>FTA</i>	<i>GSP</i>	Mauritania	EBA	EBA
<i>Libya</i>	<i>N/A</i>	<i>GSP</i>	Niger	EBA	EBA
<i>Western Sahara</i>	<i>N/A</i>	<i>GSP</i>	Sierra Leone	EBA	EBA
Rest of Western Asia			Togo	EBA	EBA
<i>Jordan</i>	<i>FTA</i>	<i>GSP</i>	South Central Africa		
<i>Lebanon</i>	<i>FTA</i>	<i>GSP</i>	Angola	EBA	EBA
<i>Palestinian Territory Occupied</i>	<i>N/A</i>	<i>GSP</i>	Congo (Democratic Republic of)	EBA	EBA
<i>Yemen</i>	<i>EBA</i>	<i>GSP</i>			
Iraq	GSP	GSP			
Syrian Arab Republic	GSP	GSP			

Note: In bold, GTAP aggregated regions (that cannot be further disaggregated). Columns (1) show the actual regime under which countries export to EU27 in 2014. Columns (2) show the preference regime under which countries export to EU27 in our model. Italics denote misclassified countries.

Table A.4. Regional nomenclature - geographical regions.

Region	Description	Composition (GTAP regions)
AfrNord	North Africa	Egypt [†] , Morocco [†] , Rest of North Africa [‡] , Tunisia [†]
ASEAN	Association of Southeast Asian Nations	Cambodia [*] , Indonesia [‡] , Laos [*] , Malaysia, Philippines [‡] , Rest of South-East Asia, Singapore, Thailand [‡] , Vietnam [‡]
ChinaHK	China and Hong Kong	China [‡] , Hong Kong
Dvd Asia	Developed Asia	Korea, Taiwan
EFTA	European Free Trade Association	Norway, Rest of EFTA, Switzerland
EU27	European Union (27 member States)	Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Rest of North America
India	India	India
Japan	Japan	Japan
LAC	Latin America and Caribbean	Bolivia [‡] , Caribbean [†] , Colombia [‡] , Costa Rica [‡] , Ecuador [‡] , El Salvador [‡] , Guatemala [‡] , Honduras [‡] , Nicaragua [‡] , Panama [‡] , Peru [‡]
Mercosur	Southern Common Market	Argentina, Brazil, Chile, Paraguay [‡] , Uruguay
MiddleEast	MiddleEast	Bahrain, Iran, Israel, Kuwait, Oman, Qatar, Rest of Western Asia [‡] , Saudi Arabia, United Arab Emirates
Nafta	North American Free Trade agreement	Canada, Mexico [†] , United States of America
Oceania	Oceania	Australia, New Zealand, Rest of Oceania [‡]
OtherEur	Rest of Europe	Albania, Armenia [‡] , Azerbaijan, Belarus, Croatia, Georgia [‡] , Kazakhstan, Kyrgyzstan [‡] , Rest of Eastern Europe, Rest of Europe, Rest of former Soviet Union [‡] , Russian Federation, Turkey, Ukraine
RoDvpgA	Rest of developing Asia	Bangladesh [*] , Mongolia [‡] , Nepal [*] , Pakistan [‡] , Rest of East Asia, Rest of South Asia [‡] , Rest of the World, Sri Lanka [‡]
SSA	Sub Saharan Africa	Benin [*] , Botswana [†] , Burkina Faso [*] , Cameroon [†] , Central Africa [‡] , Côte d'Ivoire [†] , Ethiopia [*] , Ghana [†] , Guinea [*] , Kenya [†] , Madagascar [*] , Malawi [*] , Mauritius [†] , Mozambique [*] , Namibia [†] , Nigeria [‡] , Rest of Eastern Africa [*] , Rest of South African Custom Unions [‡] , Rest of Western Africa [*] , Rwanda [*] , Senegal [*] , South Africa [†] , South Central Africa [*] , Tanzania [*] , Togo [*] , Uganda [*] , Zambia [*] , Zimbabwe [†]

Note: ^{*} denotes countries covered by the EBA regime. [†] denotes countries that were under the standard GSP regime in 2007 and that have signed a FTA with the European Union before 2014, [‡] denotes countries under the standard GSP regime after the 2014 reform.

Appendix B. Sensitivity analysis

Sensitive products. The results in this paper rely on several simplifying assumptions, and this applies particularly to consideration of sensitive products. In the case of FTAs implemented after 2007 (not reflected in the MAcMAP bilateral applied tariffs), our baseline assumes that they resulted in complete trade liberalization. However, this ignores cases of agricultural products considered sensitive by some partner countries. Hence, our simulations tend to overestimate the value of the preferential agreements and the costs of removing the preferences for those countries in the FTA group. In order provide bounds to the uncertainty, in the following simulation, we build an alternative reference scenario: tariffs for imports from FTA countries to the EU27 are totally removed in 2015, except for sugar, milk and meat, considered as sensitive products. For these three sectors, MFN tariffs are then applied as a counterfactual simulation. The policy scenario remains the same as previously: in 2015, all imports from EBA, FTA and GSP to the EU27 face MFN duties. This should give a lower bound to the estimates of the impact of the preferential agreements.

The reference economy (i.e. the outcome of the baseline in 2025) changes if we consider sensitive products in the agreements between EU27 and FTA countries. FTA countries face an *ad valorem* duty of 5.05% on agricultural products (see table B.1) instead of 0.48% without sensitive products. These tariffs mostly affect the sugar trade pattern. Sugar exports from the FTA countries subject to the EU MFN tariff (i.e. 91% AVE), they become uncompetitive and are replaced mainly by exports from EBA countries which are imported by the EU27 quota free and duty free. Imports of animal products (including milk) and the category identified as "meat" from FTA countries also decrease significantly, -35% and -95% respectively but trade diversion is lower and does not affect countries covered by the GSP. Overall, if special products are considered, Table B.2 shows that exports from the FTA countries to the EU27 are lower (-4.4%) in 2025 while those from EBA regime countries increase (+1.9%), especially in the case of agricultural products (-35% under FTA and +22% under EBA).

Table B.1. Changes in bilateral exports (in percentage) caused by sensitive products in the FTA group.

Scenario	Country	Average tariffs		Sectoral tariffs					
		Agri.	Indus.	Cattle	Clothing	FV	Meat	Rice	Sugar
2015 Baseline	EBA	0.41	0.00	0.00	0.00	0.00	0.84	0.00	6.97
	FTA	5.05	0.01	0.00	0.00	0.01	44.79	0.02	88.10
	GSP	11.61	2.81	10.51	8.52	12.46	35.57	25.32	103.91

Note: Trade in volume, percentage deviation in 2025 between the baseline with sensitive products included in free trade agreements and the baseline without sensitive products.

Table B.2. Changes in bilateral exports (percentage) due to sensitive products in FTA.

Country	Importer	Total	Agriculture	Energy	Industry	Services
EBA	EU27	1.9	22.1	-0.1	-0.3	-0.2
FTA	EU27	-4.4	-34.9	0.7	1.2	0.9
GSP	EU27	-0.1	0.4	0.1	0.1	0.1

Note: Trade in volume, percentage deviation in 2025 between the baseline with sensitive products included in free trade agreements and the baseline without sensitive products.

Tariffs on sensitive products also have an impact on the distribution of value added between sectors in each country. In the baseline, agricultural value added in "EBA" is higher (+0.4%) if sensitive products are included in the free trade agreements signed between FTA countries and the EU27, and lower for FTA countries (-1.8%), as illustrated in Table B.3.

Table B.3. Impact on GDP and sectoral value added - Baseline comparison (expressed as a percent).

Country	Value Added			
	Agriculture	Energy	Industry	Services
EBA	0.4	-0.1	-0.2	-0.1
FTA	-1.8	0.4	0.7	0.1
GSP	0.0	0.0	0.0	0.0

Note: Volume, percentage deviation in 2025 between the baseline with sensitive products included in free trade agreements and the baseline without sensitive products.

Simulations. The counterfactual policy scenario we consider is the same as before: in 2015, instead of reforming the GSP, the EU removes all the trade preferences accorded to developing countries. In other words, starting from 2015, "EBA", "FTA" and "GSP" aggregates face MFN tariffs when exporting to EU27. We then compare this policy scenario to the alternative baseline which includes sensitive products in agreements between "FTA" countries and the EU27. We expect to find a larger impact for "EBA" countries, and a smaller one for "FTA" ones, when trade preferences are removed.

The results in Table B.4 go in this direction: total exports from "EBA" and "FTA" to EU27 decrease by 20% and 13% (compared to a baseline that does not consider sensitive products, exports from these regions drop by 18% and 17% respectively, see Table 2). Therefore, these figures provide an approximation of the range where trade preferences granted to developing countries impact on their exports.

Table B.4. Long term impact on bilateral exports (expressed as a percent).

Exporter	Importer	Total	Agriculture	Energy	Industry	Services
EBA	EU27	-19.7	-56.9	2.3	-27.9	3.8
FTA	EU27	-13.4	-35.9	-0.1	-19.2	2.6
GSP	EU27	-0.9	-11.2	-1.6	-0.9	0.7
EBA	World – EU27	2.3	3.8	1.3	3.9	3.2
FTA	World – EU27	2.3	1.5	1.5	2.5	1.9
GSP	World – EU27	0.1	-0.2	0.2	0.1	0.1
World – (EBA+FTA+GSP)	EU27	0.6	1.7	0.4	0.6	0.1
EBA	World	-2.3	-18.1	1.4	-7.4	3.4
FTA	World	-1.2	-10.1	1.2	-1.5	2.2
GSP	World	-0.1	-1.7	-0.2	-0.1	0.3
World	EU27	-0.2	-0.2	0.0	-0.3	0.3

Note: Trade in volume, percentage deviation from the baseline including sensitive products in FTA in 2025.

As before, the largest reduction in exports is in agricultural products, with a larger decrease for EBA than in the central baseline (-57% vs. -47%) and a smaller one for "FTA" (-36% vs. -58%). The effect for "GSP" countries is slightly more negative if sensitive products are considered. If we consider GDP and sectoral value added the pattern is the same (table B.5) but with seemingly larger consequences for "EBA" and slightly reduced impact for "FTA", compared to a less favorable baseline.

Table B.5. Impact on GDP and sectoral value added - FTA with sensitive products.

Country	GDP	Value Added			
		Agriculture	Energy	Industry	Services
EBA	-0.29	-1.17	1.01	-1.89	0.09
FTA	-0.11	-1.03	0.73	-0.16	0.03
GSP	-0.02	-0.07	-0.01	0.00	0.00
EU27	0.01	0.59	-0.2	-0.04	-0.01

Note: Volume, percentage deviation from baseline including sensitive products in FTA in 2025.

Finally, as already mentioned, considering special products in the agreements signed between "FTA" countries and the EU27 has a larger negative impact for "EBA" and smaller negative impact for the "FTA" aggregates; this difference comes from the baseline not the policy scenario. In a sense, these results provide a lower bound for estimating the impact of European trade preferences on "FTA", and a higher bound in the case of "EBA".

Appendix C. Focusing on sugar to illustrate EU preferential schemes

Sugar is a commodity produced by many developing countries subject to few non-tariff barriers such as sanitary or phytosanitary restrictions. It plays a particular role in the preferences granted by the EU to developing countries. In the past, thanks to preferential access to the EU, countries such as Mauritius and Barbados have enjoyed significant rents from sugar, which have helped them to diversify to other sectors (tourism and apparel in the case of Mauritius). Recently, countries such as Sudan or Mozambique have exploited these preferences to develop an industry.

For many years, imports of sugar to the EU have been restricted to protect the domestic sugar regime, through high domestic prices and supply controls (production quotas). The EU sugar regime is characterized by high MFN tariffs and sugar was excluded from most trade agreements. A system of export subsidies (funded by producers who enjoyed high prices for the share of their production covered by "A" quota) and the ability to produce off-quota sugar for export (so-called "C" sugar) were also part of the regime. This system survived the 1994 Marrakesh agreement which concluded the Uruguay Round, despite a system of tariff quotas related to both current access and minimum access requirements. However, the Uruguay Round agreement capped export subsidies (which proved important later, when the EU sugar regime was challenged under the WTO dispute settlement body). In 2001, the EBA initiative, which removed duties and quotas progressively for the poorest countries, resulted in significant imports from large sugar producers such as Sudan. The EU gradually became a net importer of sugar, importing roughly 2 million tons of sugar a year, 1.6 million tons of which were from ACP countries and LDCs.

In 2003, a WTO panel was established following a complaint by Brazil, Australia and Thailand about the European sugar regime. The panel found that the exports of off quota sugar could be considered as benefiting from export subsidies above the ceiling granted to the EU. The panel also *de facto* lowered the ceiling for export subsidies, concluding that re-exportation of ACP originating sugar at prices lower than EU prices had to be counted against the export subsidies ceiling. After the 2005 WTO ruling against its trade policies, in 2006 the EU implemented a major reform of its sugar sector: it stopped using various export subsidies and granting export refunds for processed products. The reform was driven not only by the outcome of the WTO dispute but also by the surge in imports from LDCs and by several domestic objectives (such as reducing production in less efficient areas that had benefited from production quotas while output in productive areas was capped). This resulted in lower institutional prices, a sharp decrease in EU production and a major restructuring of the sector involving the closure of a large number of refineries, particularly in higher production cost member states (e.g. Finland, Ireland and Italy). In the case of the developed countries, the WTO panel's ruling

was a double edged sword since the resulting reform led to a reduction in European domestic prices, and hence the rents associated to preferential access.

Currently, the EU charges specific high import duties on sugar under the MFN regime: €339 per metric ton of raw sugar for refining and €119/MT of other raw sugar. Sugar-containing imports face duty proportional to their sugar content which can be complex duties. The regular GSP excludes sugar products. However, imports from LDCs and those ACP countries that have signed EPAs enter duty free. The EU can trigger control measures if imports of ACP and LDC sugar exceed a particular ceiling. It is estimated that exports from ACP/LDC to the EU for 2014-2015 amount to 2.2 million tons. Developing countries other than least developed and ACP countries also have preferential access to the European sugar market. Agreements with Balkan countries, the Andean Pact and Central American FTA arrangements allow preferential imports. Sugar is imported at reduced or zero duty under various Tariff Rate Quotas (TRQs), including those corresponding to compensations for the EU enlargement. TRQs include some 677,000 MT of raw cane sugar for refining with quotas allocated to Brazil (334,000 MT), Cuba (69,000 MT), Australia and India as well as a 254,000 MT *erga omnes* quota. The TRQ allocated to India faces zero duty, all other TRQ include a €8/MT in-quota tariff. Overall, the protection on sugar applies only to a limited number of countries including Australia and Brazil (off-quota).

Preferential access to the EU market has a positive impact on the poorest countries and particularly those in the Southern cone of Africa where countries eligible to EU preferential access under the EBA have benefited from investment flows. However, the conclusion of more trade agreements has resulted in more countries obtaining access to the EU market which in some cases, is eroding the value of the preferences granted to LDCs under the EBA, already dented by lower domestic prices in the EU.

An investigation of sugar trade policy must take account of interrelated markets, i.e. isoglucose (sugar substitute produced from maize in the US, and in the EU mostly from wheat) and ethanol (which can be produced from sugar). The dismantling of the sugar production quotas in 2017 is likely to liberalize imports of isoglucose, especially high fructose corn syrup with the result that LDCs currently exporting sugar to the EU will face competition from US corn syrup. The EU border protection on ethanol depends on preferential agreements and the statistical classification of ethanol related products. The MFN tariff on ethanol for fuel is €19.20/hectolitre for pure undenatured ethanol, and €10.20/hl for denatured ethanol. Similar to sugar and isoglucose, some ethanol imports are subject to reduced duty under preferential agreements. Currently, countries such as the US face a higher than MFN tariff due to added antidumping duty (currently €2.3/MT of bioethanol) but these will expire by 2018. The list of tariff exemptions for pure undenatured ethanol is similar to the list for sugar. LDCs and EPA countries can export ethanol to the EU duty free. As long as other countries face a high MFN tariff, this provides LDCs and EPA countries with significant export possibilities.

However, should a free trade agreement be concluded with Mercosur or with the US, exports from the ACP countries might face severe competition, given the production costs of ethanol in Brazil and the support granted to US ethanol producers.

Appendix D. Aggregation methodology in the MAcMap database

The aggregation methodology used in the MAcMap database is discussed in Bouët et al. (2008). In short, tariffs are aggregated using a weighted average, where the weights are given by the imports from a reference group of similar countries. The weight is product-exporter-importer specific:

$$Weight_{i,partner,reporter} = M_{i,partner,RefGrp(reporter)} \frac{M_{\cdot,\cdot,reporter}}{M_{\cdot,\cdot,RefGrp(reporter)}}$$

where $M_{i,partner,reporter}$ refers to the value of product i (defined at the HS-6 level) imported by country $reporter$ from country $partner$. $RefGrp(reporter)$ refers to the reference group the country $reporter$ belongs to, and “ \cdot ” refers to the total, so that $M_{\cdot,\cdot,reporter}$ refers to the total value of $reporter$ ’s imports. This aggregation method tries to avoid the endogeneity bias induced by the use of import-weighted averages (the higher the tariff, the lower the import flow) while trying to take into account the specificities of the economy of the considered country (which cannot be accounted for when using world imports as the weight).

In the study, we consider sectors that gather many HS6 products; all the tariffs considered are aggregated tariffs. Even if two $partner$ countries face the same tariff when exporting to the same $reporter$ country at the product level, aggregated tariffs (at the sector level) differ if the two $partner$ countries do not belong to the same reference group. Furthermore, we consider *ad valorem* equivalents of specific duties, when these duties exist (as in the case, among others, of some HS6 products included in the “sugar” sector which we consider in the simulations). These equivalents are built by dividing the specific duty by an average unit value computed for each country and each product. Then, even if all $partner$ countries face the same specific duty (e.g. a MFN specific duty), they will not show the same *ad valorem* equivalent because each country will have a specific unit value for the product considered.

Acronyms

ACP:	African-Caribbean-Pacific regions
AVE	Ad valorem equivalent
CARIFORUM:	Caribbean Forum (subgroup of African, Caribbean and Pacific Group of States)
CEPII:	Centre d'Etudes Prospectives et d'Informations Internationales
EAC:	Eastern African Community
EBA:	Everything But Arms
EPA:	Economic Partnership Agreement
EU:	European Union
FAO:	Food and Agriculture Organization of the United Nations
FTA:	Free Trade Area
GDP	Gross domestic product
GFSI:	Global Food Security Index
GSP:	Generalized Scheme of Preferences
IFAD:	International Fund for Agriculture Development
LDC:	Least Developed Country
MAcMap:	Market Access Map
MFN:	Most Favored Nation
MIRAGE:	Modelling International Relationships in Applied General Equilibrium
TDCA:	Trade, Development and Cooperation Agreement
WTO:	World Trade Organization

The FOODSECURE project in a nutshell

Title	FOODSECURE – Exploring the future of global food and nutrition security
Funding scheme	7th framework program, theme Socioeconomic sciences and the humanities
Type of project	Large-scale collaborative research project
Project Coordinator	Hans van Meijl (LEI Wageningen UR)
Scientific Coordinator	Joachim von Braun (ZEF, Center for Development Research, University of Bonn)
Duration	2012 - 2017 (60 months)

Short description

In the future, excessively high food prices may frequently reoccur, with severe impact on the poor and vulnerable. Given the long lead time of the social and technological solutions for a more stable food system, a long-term policy framework on global food and nutrition security is urgently needed.

The general objective of the FOODSECURE project is to design effective and sustainable strategies for assessing and addressing the challenges of food and nutrition security.

FOODSECURE provides a set of analytical instruments to experiment, analyse, and coordinate the effects of short and long term policies related to achieving food security.

FOODSECURE impact lies in the knowledge base to support EU policy makers and other stakeholders in the design of consistent, coherent, long-term policy strategies for improving food and nutrition security.

EU Contribution	€8 million
Research team	19 partners from 13 countries

FOODSECURE project office

LEI Wageningen UR (University & Research centre)
Alexanderveld 5
The Hague, Netherlands

T +31 (0) 70 3358370
F +31 (0) 70 3358196
E foodsecure@wur.nl
I www.foodsecure.eu

