Between the requirements of "regulations" and "standards" in food safety: challenges and opportunities for developing countries' exports of tropical fruits to the European Union.[1]

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Keywords: EU Law; Private standards; developing countries; Tropical fruits trade; Pesticides residues.

Abstract: Developing countries' exports of tropical fruits to the European Union (EU) is undeniably significant for their economy and social gains. Latin American, Caribbean and African countries are important suppliers of tropical fruits (mangoes, guavas, bananas and pineapples) to the EU market. Food scares over the last two decades in industrialised countries has led to increasingly stringent food safety regulations. Consumers concerns with regard to the safety and quality of food have also influenced the private sector, which has developed numerous standards for imported fruits sold in supermarkets. In addition to EU regulations, developing countries have also to comply with the evolving "voluntary" requirements imposed by private companies in order to participate in value chains. These "new" requirements are mainly private protocols which apply to all suppliers, and are based on a combination of international and national regulations for pesticides and other food safety standards. As a consequence, developing countries' exports of tropical fruits are affected by food safety regulations and standards imposed by both EU governmental and non-governmental actors. With food safety being a top priority for both the public and private sectors, there is a need to examine the development of the requirements as applied to imports of tropical fruits from developing countries within the EU and particularly those imposed by retailers. Therefore, the aim of this paper is to critically analyse, from a legal perspective, the nexus between the two forms of

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food safety requirements, regulations and standards, with a particular focus on pesticides, and to assess the potential impacts of this alliance on developing countries' opportunities to access the EU market.

Introduction

Production and export of tropical fresh fruits from developing countries (DCs) to the European Union (EU) has grown rapidly during the past decade in response to the high consumer demand for fresh produce variety and "healthiness."[3] This increase export of off-season tropical produce has also been facilitated by the rapid shipment of these products by the improved sea and air route. Thus, in light of the accelerated year-round demand for delivery of fresh produce, international trade in fresh fruits is considered as a "multibillion-dollar business"[4] particularly important for DCs since it is fundamental to the generation of their foreign exchange and rural employment.[5] The EU is considered to be the "world's largest multi-nation trading bloc"[6] and is also the world's largest import market for fresh tropical fruits.[7] However, following several food crises during the past decades,[8] public's confidence in regulatory agencies to deal with food safety issues declined severely and consumers were demanding safety assurances. Given the significant trade of food products around the world, there was a need for EU public authorities and for producers to ensure the safety of these products to concerned consumers.

The government is aware that tropical fresh fruits can be important to a healthy diet but their worldwide exports represent also a risk for human health and the

[3] Jaffee, S. and Masakure, O.,"Strategic use of private standards to enhance international competitiveness: Vegetable exports from Kenya and elsewhere" (2005) 30 (3), Food Policy, 316-333. p 317

[4] Food and Agricultural Organization of the United Nations (FAO). *Food Safety and Quality, "fresh fruits and vegetables"*: [Online].Available from: (http://www.fao.org/ag/agn/agns/foodproducts_fresh_en.asp) [Accessed: 15/05/2010].

[5] Perry, S., Tropical and Diversification products, strategic options for Developing Countries, Issue paper No. 11, ICTSD Programme on Agricultural Trade and Sustainable Development, 2008. p 7

[6] Brans, H. and Vandercammen, G., EU-25: Food and Agricultural Import Regulations and Standards, GAIN Report-E36098, USDA Foreign Agricultural Service, 2006. p 4

[7] Within the EU, France and the UK are the major importers of tropical fresh fruits and The Netherlands is the major European transhipment point for imported tropical fruits.
Source: Food and Agricultural Organization of the United Nations (FAO), Medium-term prospects for agricultural commodities, projections to the year 2010, Rome, FAO, 2003.

[8] These include for instance the transmission of Bovine Spongiform Encephalopathy (BSE) in beef in the UK.

environment resulting from important use of plant protection products (PPP)[9] which ensure commercial production of the products. Pesticides are considered to be a serious issue on the food safety and environmental pollution as these toxic products leave residues in and on food with serious impact on both human health and environment. As a consequence, consumers demand for tropical fruits associated at the same time with their concerns about food safety have led to the imposition of new legislation and the reinforcement of control systems within the EU.[10] There is therefore, as a general EU rule, a procedure to control the level of residues in fresh fruits when imported, in order to assess their risks for consumers. EU legislation requires a Maximum Residue Level (MRL) of plant protection products in fresh fruits products.[11] Such MRL has to respect the conditions established by the "Good Agricultural Practice" (GAP)[12] and the safety limit fixed by the "Acceptable Daily Intake" (ADI).[13]

In parallel with EU regulatory developments and in response to consumer concerns and demand for food safety,[14] the private sector developed rapidly its own quality and safety standards based on a combination of international and national regulations for pesticides and other food safety standards. This is for instance the case of GlobalGAP selected in this paper for examination. GlobalGAP is an international organisation private sector that establishes voluntary standards for the certification of agro-food products worldwide. These standards relate to both food production and distribution

[9] In this paper, plant protection products refer to pesticides used for agricultural purposes and exclude therefore biocides which are not intended for plant use.
[10] Roberts, D. and Unnevehr, L.,"Resolving trade disputes arising from trends in food safety regulation: the role of the multilateral governance framework" (2005) 4 (3), World T.R., 469-497. p 470
[11] Regulation (EC) No 396/2005 of the European Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC. OJ L 70, 16.3.2005, p.1-16.
[12] The "Codex Alimentarius" establishes that "Good Agricultural Practice in the Use of Pesticides (GAP) includes the nationally authorized safe uses of pesticides under actual conditions necessary for effective and reliable pest control. It encompasses a range of levels of pesticide applications up to the highest authorised use, applied in a manner which leaves a residue which is the smallest amount practicable."
Source: Secretariat of the Joint FAO/WHO Food Standards Programme, "Codex Alimentarius Commission, procedural manual" 19th ed., WHO/FAO, 2010. p 19
[13] The acceptable daily intake is a measure of toxicity referring to the "highest daily dose of the component in question which a human may consume without this causing any adverse effect viewed over a lifetime." Definition provided in Broberg, M., European Food Safety Regulation and the Developing Countries: regulatory problems and possibilities, DIIS Working Paper, 2009. p 8
[14] Henson, S. The role of public and private standards in regulating international food markets. In: *Food Regulation and Trade: Institutional Framework, Concepts of Analysis and Empirical Evidence", IATRC Summer Symposium.* Bonn, 28-30 May 2006.

processes[15] in order to give assurance that "food will not cause harm to the consumer when it is prepared and consumed according to its intended use."[16] It is clear that private companies establish and maintain their reputation on the marketplace by guaranteeing safe products of high quality.[17] Therefore, some private standards are even higher than those set by the government and expand sometimes beyond food safety and quality standards to include for instance environmental, social, labour and ethics standards.[18] Food safety has thus become a top priority for the private sectors and it is believed that private standards are becoming the "predominant drivers of agri-food systems."[19]

Both standards and regulations ensure public health and safety in relation to food by determining how food is produced, processed and delivered to the consumer.[20] This is why their position within the governance structure of the food system is considered significant.[21] They can also have an important impact on international trade by ensuring consumer's confidence in imported food and thus increase economic growth.[22] However, despite achieving the same objective, private standards and public regulations in food safety are different from each other. While food safety regulations imposed by EU governmental actors are implemented in law, private standards have no legally binding force and compliance is voluntary.[23] Given this, DCs must comply with public requirements if they want to exports their goods. Requirements imposed by private companies are not compulsory *per se*, however, given the high proportion of fresh fruits sold in supermarkets, retailers are seen as "increasingly powerful"

[15] Fulponi, L.,"Private voluntary standards in the food system: The perspective of major retailers in OECD countries" (2006) 31 (1), Food Policy, 1-13. p 2
[16] Definition of food safety provided by GlobalGAP.
Source: GlobalGAP. 2009.*General Regulations, Annex I Definitions*: [Online].Available from: (http://www.globalgap.org/cms/upload/The_Standard/IFA/English/GRs/PartI/GG_EG_IFA_GR_AnnexI-1_ENG_V3_1_Nov09.pdf) [Accessed: 15/05/2010].
[17] Reardon, T. and Farina, E.,"The rise of private food quality and safety standards: illustrations from Brazil" (2002) 4 (4), International Food and Agribusiness Management Review, 413-421. p 416
[18] Fulponi, L.,"Private voluntary standards in the food system: The perspective of major retailers in OECD countries" (2006) 31 (1), Food Policy, 1-13. p 2
[19] Henson, S. and Reardon, T.,"Private agri-food standards: Implications for food policy and the agri-food system" (2005) 30 (3), Food policy, 241-253. p 242
[20] Fulponi, L.,"Private voluntary standards in the food system: The perspective of major retailers in OECD countries" (2006) 31 (1), Food Policy, 1-13. p 2
[21] Ibid.
[22] DFID, Standards as Barriers to Trade: Issues for Development, DFID Background Briefing, London, Department for International Development, 2001.
[23] Henson, S. The role of public and private standards in regulating international food markets. In: *Food Regulation and Trade: Institutional Framework, Concepts of Analysis and Empirical Evidence", IATRC Summer Symposium.* Bonn, 28-30 May 2006.

actors in the food chain[24] and dependent suppliers have little or no option but to comply if they want to participate effectively in value chains. It has therefore been observed that private standards can be *de facto* mandatory for suppliers.[25]

There is a particular focus from both national governments and the private sector on the risks associated with residues from pesticides within the fresh fruit sector.[26] This resulted in important developments and improvement in pesticides regulations and the imposition of complementary high private standards to ensure legal compliance. However, with standards and regulations completing each other, such developments can be criticised in the sense that they have severe impact on international trade and particularly for trade of tropical fresh fruits treated with toxic crop protection products in DCs. This paper will therefore examine the extent to which this alliance between food safety regulations and standards developed within the EU market, affect trade flow and particularly imports of tropical fruits from developing countries with particular focus on Jamaica, which is now diversifying away from traditional crops[27] towards tropical fresh fruits exports. Pesticides standards are one of the main subset of food safety standards[28] and are thus analysed in this paper.

[24] Havinga, T.,"Private Regulation of Food Safety by Supermarkets" (2006) 28 (4), Law & Policy, 515-533. p 525
[25] WTO, Committee on Sanitary and Phytosanitary Measures, "Private voluntary standards and developing countries market access: preliminary results" Communication from OECD, G/SPS/GEN/763, 27 February 2007
[26] Jaffee, S. and Henson, S., Standards and agro-food exports from developing countries: rebalancing the debate, World Bank Policy Research Working Paper 3348, June 2004. p 1
[27] Jamaica's traditional export crops are mainly sugar and bananas.
[28] The other subsets being for instance microbacteriological contamination (food born disease).

I- Developing countries and tropical fresh fruits production

DCs are the main producers and exporters of fresh tropical fruits in the world. These products account for about 98 percent of total production and are mainly exported to developed countries representing around 80 percent of world import trade. [29] It is widely recognised that DCs are heavily dependent on tropical products which form the backbone of their economies and account for the "bulk" of their export earnings.[30] These products provide opportunities for poverty alleviation, rural development and export diversification.[31] Mangoes, pineapples, papayas, and avocados[32] are the main tropical fruits produced worldwide[33] and account for about "75 per cent of global fresh tropical fruit production."[34] The Caribbean and Latin America are among the main important tropical fresh fruits producing regions accounting for 32 percent of global production[35] and export largely to the EU which is their primary import market.[36]

Given this context, there is therefore a need for farmers in DCs to maintain successful production of tropical food products while facing significant tropical fruits pests that damage crops quantity and quality. It is considered that the use of agrochemicals is the simpler way for DCs to protect their crops and thus increase the production of food.[37] Agrochemicals are of particular importance for countries affected by tropical or sub-tropical climatic conditions where fruits are more frequently affected by pests

[29] Food and Agricultural Organization of the United Nations (FAO), Medium-term prospects for agricultural commodities, projections to the year 2010, Rome, FAO, 2003.
[30] Perry, S., Tropical and Diversification products, strategic options for Developing Countries, Issue paper No. 11, ICTSD Programme on Agricultural Trade and Sustainable Development, 2008. p 7
[31] United Nations Conference on Trade and Development (UNCTAD), Food Safety and Environmental Requirements in Export Markets- Friend or Foe for Producers of Fruit and Vegetables in Asian Developing Countries?, UNCTAD/DITC/TED/2006/8, United Nations Publication 2007.
[32] The production of mangoes accounts for nearly 50 percent of world tropical fruit production and is forecast to reach 30.7 million tonnes by 2010.
Source: Food and Agricultural Organization of the United Nations (FAO), Medium-term prospects for agricultural commodities, projections to the year 2010, Rome, FAO, 2003.
[33] Production of these products is expected to reach 62 million tonnes by 2010.
Source: Ibid.
[34] Ibid.
[35] The other major producing regions are Asia, the Pacific region, Costa Rica and Brazil.
Source: Ibid.
[36] European Commission White Paper, "Opening the Door to Development Developing Country Access to EU Markets 1999-2003", Brussels, 23/05/2005.
[37] Carvalho, F. P.,"Agriculture, pesticides, food security and food safety" (2006) 9 (7-8), Environmental science and policy, 685-692. p 689

and diseases that pose risks to human, animal and/or plant health.[38] Therefore, pesticides are applied in massive amounts in small farms and industrial plantations such as banana.[39] However, it has been observed that the overuse, abuse or misuse of highly toxic plant protection products can seriously contaminate soils, water and the fruits[40] with grave human health risks.[41]

It must be noted that the use of agrochemicals as a way to improve food security is used in both developed and developing countries. However, in light of consumers' concerns over pesticides residues effects on human health and the environment, developed countries chose to move towards more natural pest control products, which are more expensive, but deemed to be more ecologically friendly than chemical pesticides.[42] In contrast, DCs cannot afford the use of such alternative PPP due mainly to their limited access to foreign currency.[43] Farmers will especially use cheap chemicals, such as DDT,[44] either because their patents expired or because they are offered by developed countries.[45] It is pointed out that the issue of high pesticide residues in DCs is often linked to lack of farmers training and awareness of their toxic effects. Moreover, there is also the problem of pesticides containers with missing or damage labels and farmers are usually using products provided with complex instructions or written in the wrong language.[46] This problem is particularly frequent for users of pesticides in small farms who provide the bulk of the country's commodities exports but have also poor reading and writing skills. However, these farmers cannot rely on their governments which usually implement a basic sanitary and phytosanitary control system and are thus unable to control health and safety

[38] Jaffee, S. and Henson, S., Standards and agro-food exports from developing countries: rebalancing the debate, World Bank Policy Research Working Paper 3348, June 2004. p 2
[39] Carvalho, F. P.,"Agriculture, pesticides, food security and food safety" (2006) 9 (7-8), Environmental science and policy, 685-692. p 688
[40] Ibid., p 688.
[41] For instance, in July 1985, almost two thousands people became ill after eating watermelons contaminated with the insecticide "aldicarb." Six deaths and two stillbirths were also reported. Source: Cox, C.,"Aldicarb" (1992) 12 (2), Journal of pesticides reform, 31-35. p 33
[42] Carvalho, F. P.,"Agriculture, pesticides, food security and food safety" (2006) 9 (7-8), Environmental science and policy, 685-692. p 689
[43] Ecobichon, D. J.,"Pesticide use in developing countries" (2001) 160 (1-3), Toxicology, 27-33. p 28
[44] Dichlorodiphenyltrichloroethane.
[45] Carvalho, F. P.,"Agriculture, pesticides, food security and food safety" (2006) 9 (7-8), Environmental science and policy, 685-692. p 689
[46] Pesticides Action Network UK, "Pesticide residues in food" pest management note n° 8, November 1998. [Online]
Available from: http://www.pan-uk.org/Internat/IPMinDC/pmn8.pdf [Accessed 03/01/2008].

practices in pesticide application efficiently nor to check effectively the incidence of residues.[47] The EU government on the other hand is aware of such situation and this gives rise to concern for tropical fresh fruits safety produced in these countries for international exports.

II- Public regulation: the EU control of plant protection products and their residues in fresh fruits

The use of pesticides, as hazardous chemical substances, is of significant importance in order to protect crops from pests and plant diseases and thus increase food productivity. The most common pesticides used in agriculture include herbicides, insecticides, rodenticide and fungicides[48] and are considered "absolutely essential" by the EU in order to improve agricultural production and ensure "security of supplies."[49] As such, the complete ban of such products would be impossible. However, pesticides are toxic in nature, and hence, can have serious consequences on the environment, human and animal health through exposure or ingestion of food contaminated.[50] Therefore, some of them such as DDT, chlordane, lindane and aldrin, have been completely banned or severely restricted because of their established acute toxicity.[51]

As a consequence, the EU released important legislation controlling the use of pesticides in agriculture and regulating pesticides residues level in food in order to ensure a "high level of protection of human health and the environment."[52] Council Directive of 15th July 1991, controlling the placing on the EU market of plant

[47] Ibid.
[48] Those pesticides protect plants and plant products from harmful organisms such as weeds, insects, rodents and fungi.
Carvalho, F. P.,"Agriculture, pesticides, food security and food safety" (2006) 9 (7-8), Environmental science and policy, 685-692. p 688
[49] Preamble of Council Directive 91/414 of 15 July 1991concerning the placing of plant protection products on the market [1991] OJ L230/1.
[50] Wilson, J. S. and Otsuki, T.,"To spray or not to spray: pesticides, banana exports, and food safety" (2004) 29 (2), Food Policy, 131-146. p 133
[51] Ibid., p 133
These substances were banned in Europe under the banned pesticide Directive (79/117/EEC) of 21 December 1978, OJ L 033, 08/02/1979. No produce contaminated with banned substances may be imported within the EU.
[52] Europa website.
Available from: http://ec.europa.eu/food/plant/protection/index_en.htm [Accessed 15/05/2010]

protection products,[53] authorises the use of a PPP within the EU market when active substances contained in that product are included in the positive EU list.[54] While recognising the necessity of using PPP to ensure food security, the aim of the directive is to ensure that authorised pesticides do not have "unacceptable effect on plants or plant products, no unacceptable influence on the environment (…) and no harmful effect on human or animal health."[55] This objective was recognised and confirmed in 2004 by the ECJ. [56] It can be noted that the regulatory framework on pesticides was recently stretched up with the adoption of a regulation on PPP[57] and a directive on the sustainable use of pesticides.[58]

However, the use of crop protection products inevitably leaves residues in the treated food products and thus it is impossible to ensure food totally free of pesticides. As a consequence, a second EU legislation was established in 2005 in order to control pesticides residues level, as from 1 September 2008, and to guarantee human health safety.[59] The current EU harmonised legislative framework on pesticides residues ensures acceptable levels of residues in or on ago-food products for human health by establishing a "maximum concentration of a pesticide residue legally permitted in food commodities",[60] referred to as maximum residues levels (MRLs).[61] When these

[53] Council Directive 91/414 of 15 July 1991concerning the placing of plant protection products on the market [1991] OJ L230/1.
[54] The European Union's positive list is established under Annex I of Directive 91/414/EEC, OJ L230/1.
[55] Council Directive 91/414 concerning the placing of plant protection products on the market [1991] OJ L230/1.
[56] Case C-398/03 *Gavrielides Oy* [2004] (Case C-398/03) ECR-I 0000. para 23
[57] This regulation provides in particular that an active substance will not be approved unless the exposure of humans to that active substance is negligible. Annex II of the Regulation (EC) No 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection on the market and repealing Council Directives 79/117/EEC and 91/414/EEC. OJ, 24.11.2009, p. 1-50.
[58] The aim of this Directive is to reduce the linked to the use of pesticides by ensuring for instance better training and education for professional users, distributors, and advisors of pesticides. Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides. OJ 309, 24.11.2009, p. 71-86
[59] Regulation (EC) No 396/2005 of the European Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC. OJ L 70, 16.3.2005, p.1-16.
[60] Wilson, J. S. and Otsuki, T.,"To spray or not to spray: pesticides, banana exports, and food safety" (2004) 29 (2), Food Policy, 131-146. p 134
[61] Under the 2005 Regulation which fully harmonises all pesticide MRLs, maximum levels are expressed as mg/kg and are consistent with good agricultural practice in EC member States and third countries.

limits are exceeded, over 0.01 mg/kg,[62] food products cannot enter into the EU market.[63] The regulation separates "definitive" MRLs tolerances, established at EU level, from "temporary" MRLs tolerances referring to those levels which still need to be considered.[64] These tolerances must be science-based and cannot be established before the consultation of the European Food Safety Authority (EFSA)[65] deemed to be the "keystone of European Union risk assessment regarding food safety and feed safety."[66] The EFSA's Panel on Plant Protection Products and their Residues (PPR) has a key role in the control of pesticides. It provides scientific advices and opinions on pesticides residues and potential danger on consumers' health to the European Commission. This support from the EFSA is based on scientific information and data which are of important value for the adoption and implementation of efficient legislation and policies. The EU regulation provides also that setting such level of pesticides in food must be consistent with good agricultural practice (GAP) in order to fully protect all categories of consumers and particularly the more vulnerable such as unborn and children.[67] Shaw and Vannoort pointed out in 2002 that a good agricultural practice occurs when pesticides applications in fruits and vegetables are done at the right time and respect the label directions.[68] In this case, they believe there is no doubt that MRLs of pesticides are not exceeded.[69]

It is argued that EU legislation on PPP residues is "a good example of the EU approach to the presence of undesired substances in food."[70] However, it must be

[62] Case C-132/03 *Ministero della Salute v. Coordinamento delle Associazioni per la Difesa dell'Ambiente e dei Dritti Degli Utenti e dei Consumatori (Codacons)* [2005] All ER (D) 417 26/05/2005.
[63] Meulen, B. v. d. and Velde, M. v. d., *European Food Law Handbook*, Wageningen, Wageningen Academic Publishers, 2008. p 324
[64] "Definitive" tolerances are listed in Annex II of the new Regulation and 'temporary' tolerances are listed in Annex III of the new Regulation.
[65] Recital 6 of Regulation (EC) No 396/2005 of the European Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin amended by Commission Regulation (EC) No 178/2006 (OJ L 70, 16.3.2005, p.1-16)
The EFSA was established in 2002 under Regulation (EC) No 178/2002 of 28 January 2002, O.J. N° L 31 of 1 February 2002.
[66] European Food Safety Authority website. Available from: (http://www.efsa.europa.eu/) [Accessed: 15/05/2010].
[67] Recital 5 of the EC Regulation No 396/2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin.
[68] Shaw, I., and Vannoort, R., "pesticides" in Watson, D. H., (ed.) *Food chemical safety, volume 1: contaminants*, Woodhead publishing limited, Cambridge England, 2002.
[69] Ibid.
[70] Meulen, B. v. d. and Velde, M. v. d., *European Food Law Handbook*, Wageningen, Wageningen Academic Publishers, 2008. p 324

noted that despite taking into account scientific data to assess residues risks on consumers' health,[71] MRLs are not a toxicology parameter.[72] There are considered to be only an indication of the misuse of a pesticide than an actual risk to human health.[73] Given this, there is no guarantee that a fruit which contains pesticide residues over the established maximum level will represent a real danger for the consumer particularly if this product is consumed rarely. Indeed, it must be remembered that people living in the same country, within the same area, do not have the same dietary habits and some people will not be affected by residues either way. Despite this, when such exceed of the MRL index arises, EU Member States' authorities are immediately informed through the Rapid Alert System for Food and Feed (RASFF)[74] whenever there is immediate threat to consumer's safety and health.[75] Such action can affect exporters when food products consignments are rejected at the border or when products are withdrawn from the importer's market.[76]

[71] Human health risks are taken into account in order to include a temporary MRL in the Regulation and then transfer it to the definitive list.
[72] Meulen, B. v. d. and Velde, M. v. d., *European Food Law Handbook*, Wageningen, Wageningen Academic Publishers, 2008. p 325
[73] WTO, Committee on Sanitary and Phytosanitary Measures, "Questions and answers on the procedure to obtain import tolerances and the inclusion of active substances for plant protection uses in the European Communities list" Communication from the European Communities, G/SPS/GEN/557, 29 March 2005.
[74] Established under Article 50 of EC Regulation 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety , O.J. N° L 31 of 1 February 2002.
[75] WTO, Committee on Sanitary and Phytosanitary Measures, "Questions and answers on the procedure to obtain import tolerances and the inclusion of active substances for plant protection uses in the European Communities list" Communication from the European Communities, G/SPS/GEN/557, 29 March 2005.
[76] See RASFF Annual Report 2008 available from: http://ec.europa.eu/food/food/rapidalert/index_en.htm [Accessed 15/05/2010].

III- The dominant role of private food safety standards imposed by EU supermarkets

Private standards in the food sector, often referred to as "voluntary standards", has grown rapidly over the past 20 years and increasingly established new food safety and quality standards at all levels of a chain in addition to those already imposed by national governments. In the light of this rapid increase, Reardon and Farina pointed out that these standards responded to food safety concerns of consumers by filling in for missing government regulations and assure both quality and safety in a "fiercely competitive market." [77] Thus, there is no doubt that private standards create significant opportunities for trade since they are key elements of buyers and suppliers reputation and consumers satisfaction. Nevertheless, private standards have no legal existence and exporters are free to decide whether or not to comply with them and therefore to supply or not their products to the buyer requiring the standards. Food products exporters have to meet these standards to benefit their business, although this only apply to a minority of suppliers. Thus, exporters must take into account the economic consequences of taking such decision. However, sometimes firms are left with little option but to comply if they want to do business. There is a wide range of international and national and even regional private standards-setting bodies. Some of them specifically relate to food safety and quality issues such as the British Retail Consortium (BRC) and others cover both food safety and non-food safety issues. This is for instance the case of GlobalGAP, previously known as EurepGAP, [78] which is considered an important standard affecting horticultural exports to the EU[79] and is thus examined below.

[77] Reardon, T. and Farina, E.,"The rise of private food quality and safety standards: illustrations from Brazil" (2002) 4 (4), International Food and Agribusiness Management Review, 413-421.
[78] EurepGAP became GlobalGAP in September 2007.
[79] United Nations Conference on Trade and Development (UNCTAD), Food Safety and Environmental Requirements in Export Markets- Friend or Foe for Producers of Fruit and Vegetables in Asian Developing Countries?, UNCTAD/DITC/TED/2006/8, United Nations Publication 2007. p 19

A- GlobalGAP certification requirements for fresh fruits

Described as a "satellite navigation system",[80] GlobalGAP is a private sector addressing at the same time food safety and non-food safety issues to include environmental protection requirements. Originally created by European retailers in 1997 as EurepGAP,[81] it comprises now giant companies worldwide.[82] Members of this organization comprise producers/suppliers, retailers, and associates members such as certification bodies, which are all engaged in the standard-setting and decision making process.[83] The organization is committed to respond to consumer concerns on "food safety, environmental protection, worker health, safety and welfare and animal welfare."[84] In order to fulfill this commitment, GlobalGAP requirements include "intensive employee training, meticulous record keeping, frequent management reassessments of work methods and results, and annual on-farm inspections of work methods and paperwork by external auditors."[85] Failure to respect these requirements will result in GlobalGAP certification being denied or suspended.[86] The organization intends to change growers' attitudes towards food production by imposing a performance standard with defined criteria to follow in order to render production processes safe.[87] Thus, GlobalGAP applies one standard, the Integrated Farm

[80] GLOBALG.A.P website. [Online].Available from: (http://www.globalgap.org/cms/front_content.php?idcat=3) [Accessed: 15/05/2010].
[81] Euro-Retailer Produce Working Group (EUREP).
[82] Lang, T.,"Food, the law and public health: Three models of the relationship" (2006) 120 (1), Public Health, 30-41. p 32
[83] Associate members are not part of the decision-making process.
Source: GLOBALG.A.P website. [Online].Available from: (http://www.globalgap.org/cms/front_content.php?idcat=3) [Accessed: 15/05/2010].
[84] GlobalGAP. 2009.*General Regulations, Part I General Information*: [Online].Available from: (http://www.globalgap.org/cms/upload/The_Standard/IFA/English/GRs/PartI/GG_EG_IFA_GR_Part_I_ENG_V3-1_Nov09_updateMar10.pdf) [Accessed: 15/05/2010].
[85] Richard C. Yudin, M. C., and Keith R. Schneider, European Food Safety Certification - The "GlobalGAP" Standard and its Accredited Certification Program, FSHN 0801, The Institute of Food and Agricultural Sciences (IFAS), University of Florida, 2008. p 2
[86] Certification is defined as "the process by which buyers assess the compliance with defined standards and is typically undertaken by a third party agency that the buyer recognizes as 'competent'. Source: Henson, S. and Jaffee, S., Developing Country Responses to the Enhancement of Food Safety Standards in Grote, U., Basu, A. K. and Chau, N. H. (eds.) *New Frontiers in Environmental and Social Labelling*, 1st ed. New York, Physica-Verlag Heidelberg, 2007. p 202
[87] Richard C. Yudin, M. C., and Keith R. Schneider, European Food Safety Certification - The "GlobalGAP" Standard and its Accredited Certification Program, FSHN 0801, The Institute of Food and Agricultural Sciences (IFAS), University of Florida, 2008. p 2

Insurance Standard (IFA),[88] which combines all agricultural products into a single farm audit.[89]

B- General requirements for the production of fresh fruits

GlobalGAP requirements, referred to as Control Points and Compliance Criteria (CPCC), pertaining to the production of fresh fruits and vegetables, encompass a mix of food safety, environmental and social standards.[90] In light of consumer's concern over chemical issues in food safety, GlobalGAP focuses principally on food contamination. However, the organization is also focusing on social and environmental issues in third countries by controlling farmers working conditions, environmental contamination and management of biodiversity.[91] Thus, following EU example, GlobalGAP is also trying to implement its social and environmental values in DCs.[92]

CPCC for fresh fruits is divided into three sections. Under the "All Farm Base" section, referring to general rules for all agricultural operations, GlobalGAP requires for instance a proper training for workers who have to handle dangerous equipment and training on hygiene management. GlobalGAP assesses the impact of farming activities on the environment and which are according to the organization "inseparably liked."[93] The second section refers to all "Crop Base" issues under which

[88] The GlobalGAP Integrated Farm Insurance Standard is a pre-farm gate standard and applies to the "whole agricultural production process of the certified product, from before the plant is in the ground (seed and nursery control points) to non-processed end product (produce handling control points)." Source: Lee, G. C.-H., Private Food Standards and their Impacts on Developing Countries, European Commission, DG Trade Unit G2, 2006. p 20

[89] GLOBALG.A.P website. [Online].Available from: (http://www.globalgap.org/cms/front_content.php?idcat=3) [Accessed: 15/05/2010].

[90] GLOBALG.A.P. 2007.*Control Points and Compliance Criteria Integrated Farm Assurance, Fruits and Vegetables*: [Online].Available from: (http://www.globalgap.org/cms/upload/The_Standard/IFA/English/CPCC/GG_EG_IFA_CPCC_FV_ENG_V3_0_2_Sep07.pdf) [Accessed: 15/05/2010].

[91] Most of requirements relating to the environment and conservation are recommendations.

[92] For instance, the EU grants under the EU Generalised System of Preferences (GSP) additional tariff rates reduction to DCs which adopt and implement the 27 international conventions relating to core human and labour rights, and the environment and good governance principles listed in Annex III of Council Regulation (EC) No 732/2008 of 22 July 2008, OJ L 211/4. This is the so-called GSP+.

[93] GLOBALG.A.P. 2009.*Control Points and Compliance Criteria Integrated Farm Assurance - Introduction, All Farm Base*: [Online].Available from: (http://www.globalgap.org/cms/upload/The_Standard/IFA/English/CPCC/GG_EG_IFA_CPCC_Intro-AF_ENG_V3_0_3_Apr09.pdf) [Accessed: 15/05/2010].

the organization requires strong controls regarding the correct use, handling and storage of plant protection products.[94] The last section covers specifically fresh fruit and vegetables product details and farmers have to fulfill requirements referring to harvesting hygiene and produce handling hygiene.[95] In order to do so they are advised to keep clean anything that gets into direct contact with produce.[96] The produce handling hygiene requirement applies only to produce packed into cartons used for export directly inside the farm boundaries.[97] In this situation, packing and storing condition and packaging materials should be hygienic.[98] Each of these requirements is ranked into three levels of importance leaving farmers with limited flexibility on some of them. Mandatory control points referred to as "major musts", minor musts and optional requirements classed as "recommendations."[99] In order to obtain and maintain a GlobalGAP certification, fresh fruits producers must comply with all major requirements and must meet at least 95% of the minor requirements.[100]

C- GlobalGAP requirements for pesticides and Maximum Residue Levels

In order to participate in the GlobalGAP market, DCs have to meet the organization control points in relation to plant protection products. Those are found under Chapter 8 of CPCC for crops base. These requirements are usually in line with the EU

[94] See: GLOBALG.A.P. 2009.*Control Points and Compliance Criteria Integrated Farm Assurance, CROPS BASE*: [Online].Available from: (http://www.globalgap.org/cms/upload/The_Standard/IFA/English/CPCC/GG_EG_IFA_CPCC_CB_ENG_V3_0_3_Feb09.pdf) [Accessed: 15/05/2010].

[95] See control point No 5 "produce handling hygiene" of GLOBALG.A.P. 2007.*Control Points and Compliance Criteria Integrated Farm Assurance, Fruits and Vegetables*: [Online].Available from: (http://www.globalgap.org/cms/upload/The_Standard/IFA/English/CPCC/GG_EG_IFA_CPCC_FV_ENG_V3_0_2_Sep07.pdf) [Accessed: 15/05/2010].

[96] This includes containers, tools, vehicles and hands.
GLOBALG.A.P, Smallholder Guide for GlobalGAP "Hygiene Module" based on "*GLOBALGAP Control Points and Compliance Criteria Integrated Farm Assurance*", GLOBALG.A.P, 2010.

[97] Produce packed at a packhouse are exempt from this advice.

[98] GLOBALG.A.P, Smallholder Guide for GlobalGAP "Hygiene Module" based on "*GLOBALGAP Control Points and Compliance Criteria Integrated Farm Assurance*", GLOBALG.A.P, 2010.

[99] GlobalGAP provides also numerous recommendations which are not compulsory but they still need to be considered during production planning.
Source: Richard C. Yudin, M. C., and Keith R. Schneider, European Food Safety Certification - The "GlobalGAP" Standard and its Accredited Certification Program, FSHN 0801, The Institute of Food and Agricultural Sciences (IFAS), University of Florida, 2008.

[100] GlobalGAP provides also numerous recommendations which are not compulsory but they still need to be considered during production planning.
Source: Ibid.

legislation but some of them can be identified as extending beyond public controls.[101] One example is GlobalGAP control point 8.1.5 which prohibits the use of PPP that has been banned by the EU[102] on crops destined for sale in the EU.[103] Such control imposes thus additional requirements on DCs than EU Regulation 396/2005. The latter does not prohibit in DCs the usage of banned pesticides on crops destined for the EU market. The regulation provides that such pesticides can be used for reasons other than public health reasons however pesticide residues in or on the products imported must be within the EU MRLs.[104] When farmers in third countries use prohibited crop protection, traders can request an "import tolerance" for the food product exported.[105] It can be said that such possibility reflects the contrasting climatic conditions between the EU and some DCs and is particularly interesting for DCs which want to export tropical fruits such as papayas which are not produced in the EU. The EU can ban a PPP for environmental while this product could be used by DCs to destroy tropical crop-damaging pests not found in temperate climates.

Another example is GlobalGAP requirement from the producer or the producer's customer to conduct an annual or more frequent analyse of PPP residues in all products.[106] While such self-testing requirement by the producer is not established by the EU legislation, it is pointed that such residue testing is costly and cannot be avoid even when the risk is minor and no chemical PPPs have been used.[107] Such requirement from GlobalGAP is considered "very premature"[108] and imposes particularly more high costs for analyses on farmers who shifted their farming system from monocropping pattern to a mixed food crop system for organic production[109] which is currently under high demand. Given commodity prices volatility on the

[101] Lee, G. C.-H., Private Food Standards and their Impacts on Developing Countries, European Commission, DG Trade Unit G2, 2006. p 31
[102] EC prohibition Directive List Council Directive 79/117/EEC of 21 December 1978 prohibiting the placing on the market and the use of plant protection products containing certain active substances. OJ L 033, 08/02/1979.
[103] This control point is classified as a "major must" and must therefore be met.
[104] Article 3 (g) of Regulation (EC) No 396/2005, OJ L 70, 16.3.2005, p.1-16
[105] Article 3 (g) of Regulation (EC) No 396/2005 states that "import tolerance" means an MRL set for imported products to meet the needs of international trade. OJ L 70, 16.3.2005, p.1-16
[106] GlobalGAP control point 8.6.2 for fruits and vegetables.
[107] Mattson, E., Comparative study on the GLOBALGAP Fruit and Vegetables Standard and the EU Organic Agriculture Regulation, UNCTAD, Geneva, 2009. p 15
[108] Lee, G. C.-H., Private Food Standards and their Impacts on Developing Countries, European Commission, DG Trade Unit G2, 2006. p 32
[109] Mattson, E., Comparative study on the GLOBALGAP Fruit and Vegetables Standard and the EU Organic Agriculture Regulation, UNCTAD, Geneva, 2009. p 15

world market, diversified crop production systems are more profitable than monocropping. Moreover, by growing organic fresh fruits, DCs contribute considerably to biodiversity since organic agriculture should not involve the use of toxic chemical inputs.[110] However, it seems that GlobalGAP, which claims to respond to public concern on environmental protection, favours monocropping which tends to attract less diseases and pests but causes significant damage to agro-biodiversity.

IV- The relationship between EU regulations and private standards: implications for developing countries

There is no doubt that public and private standards pursue both a legitimate and well-founded objective by ensuring food safety for the public.[111] The private sector, such as GlobalGAP, sets a system of rules and regulations in relation to the imports of fresh fruits parallel to public regulations and which sometimes covers or replaces public controls.[112] Thus, while the relationship between these two forms of food safety requirements is considered to be complex,[113] it can be said that this "modern duality" model[114] is essential since it brings benefits to consumers at another level. The aim of EU regulations is to ensure that producers and exporters meet the requirements relating to the final imported product, such as MRLs, leaving producers free to choose the methods of achievement. In contrast, food companies impose safety requirements and provide specific instructions and indications which apply to the production and the process of a product.[115] With EU regulations focusing on the

[110] The International Federation of Organic Agriculture Movements (IFOAM) defines organic agriculture as "a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved."
Source: The International Federation of Organic Agriculture Movements (IFOAM) website. Available from: (http://www.ifoam.org/index.html) [Accessed: 15/05/2010].

[111] Broberg, M., European Food Safety Regulation and the Developing Countries: regulatory problems and possibilities, DIIS Working Paper, 2009.

[112] Scott for instance, is of the view that some private standards are more complete and thus enhance public controls.
See: Scott, C.,"Private Regulation of Public Sector: A Neglected Facet of Contemporary Governance" (2002) 29 (1), Journal of Law and Society, 56-76.

[113] Henson, S. The role of public and private standards in regulating international food markets. In: *Food Regulation and Trade: Institutional Framework, Concepts of Analysis and Empirical Evidence", IATRC Summer Symposium.* Bonn, 28-30 May 2006.

[114] Lang, T.,"Food, the law and public health: Three models of the relationship" (2006) 120 (1), Public Health, 30-41. p 32

[115] Lee, G. C.-H., Private Food Standards and their Impacts on Developing Countries, European Commission, DG Trade Unit G2, 2006. p 6

"outcomes" and the private sector on "processes", as two separate aspect of risk management, it is believed that public and private controls are mutually supportive and such separation of control creates a strong dynamic that has been characterised as a "tacit alliance."[116]

Such additional controls over the entire system of production are deemed indispensable to comply with EU regulations on food safety.[117] In following instructions given by private organisation for the use of pesticides, producers and suppliers are guaranteed that fresh food products meet the EU MRLs. It must be noted that when fresh fruits checked for pesticides residues exceed MRLs, consignments can be detained, rejected or even destroyed by the EU authorities.[118] The country or the supplier can be recalled from the markets with a risk of being imposed temporary or permanent bans on exports.[119] Moreover, it is also pointed out that DCs are also affected by the occasional changes in MRL which can occur to prevent violations within the EU. This was for instance the case in 2001 when the EU imposed a significant reduction in the MRL for ethephon, pesticides generally used for de-greening pineapples. This affected particularly Ghana which did not notice this change and had two shiploads of pineapples refused entry to the EU for violating the new MRL value for ethephon.[120] It should be borne in mind that these fruits were meeting the old MRL and thus would have been accepted if they had arrived at EU borders just a few days earlier.[121]

It is clear that such situation arising form violations of MRLs could damage the reputation for the exporting country, the supplier, the importer and could affect customer confidence. Caribbean and Latin American suppliers of tropical fresh fruits may therefore lose EU market buyers and may even risk to be excluded from the EU

[116] United Nations Conference on Trade and Development (UNCTAD), Food Safety and Environmental Requirements in Export Markets- Friend or Foe for Producers of Fruit and Vegetables in Asian Developing Countries?, UNCTAD/DITC/TED/2006/8, United Nations Publication 2007. p 22
[117] Hammoudi, A., Hoffmann, R. and Surry, Y.,"Food safety standards ands agri-food supply chains: an introductory overview" (2009) 36 (4), European Review of Agricultural Economics, 469-478. p 472
[118] Lee, G. C.-H., Private Food Standards and their Impacts on Developing Countries, European Commission, DG Trade Unit G2, 2006. p 24
[119] Ibid. p 24
[120] Graffham, A., EU legal requirements for imports of fruits and vegetables (a suppliers guide), *Fresh Insights* no. 1, DFID/IIED/NRI, www.agrifoodstandards.org., 2006.
[121] Ibid. p 17

market altogether.[122] With their reputation put at stake, DCs willing to participate in value chain must comply with private standards for food safety and good production practices imposed by corporate buyers. Thus, with private standards becoming increasingly important requirements for doing business,[123] their implementation, despite being voluntary, is becoming *de facto* mandatory. The privatization of standards can easily "increase the market size for a particular product."[124] In order to obtain such benefit, it is important to comply with these complex and costly requirements. However, numbers of DCs rely on traditional modes of production and suffer from capacity weaknesses and financial limitations preventing them from fulfilling these standards. They may therefore, be easily excluded from international trade in tropical fresh fruits.[125]

A- The case of Jamaica in the Caribbean region

Although high food safety requirements and rigorous controls imposed by developed country markets may impede international trade, it is believed that difficulties for DCs to comply with public and private imports requirements do not lie at the level of these requirements but at the economic compliance costs.[126] In the context of trade, these costs are defined as "the additional costs necessarily incurred by government and/or private enterprises in meeting the requirements to comply with a given standard in a given external market"[127] and are an important issue for financially disadvantaged DCs. These countries are required to export fresh fruits free of excessive pesticides residues and must therefore be capable to demonstrate their compliance. However, DCs and particularly low-income countries often lack the necessary financial,

[122] Lee, G. C.-H., Private Food Standards and their Impacts on Developing Countries, European Commission, DG Trade Unit G2, 2006. p 24
[123] United Nations Conference on Trade and Development (UNCTAD), Food Safety and Environmental Requirements in Export Markets- Friend or Foe for Producers of Fruit and Vegetables in Asian Developing Countries?, UNCTAD/DITC/TED/2006/8, United Nations Publication 2007. p 28
[124] Reardon, T. and Farina, E.,"The rise of private food quality and safety standards: illustrations from Brazil" (2002) 4 (4), International Food and Agribusiness Management Review, 413-421. p 416
[125] This is for instance the case of Kenya where smallholder participation in fresh fruits and vegetables export chains has rapidly declined over the years.
See: United Nations Conference on Trade and Development (UNCTAD), Food Safety and Environmental Requirements in Export Markets- Friend or Foe for Producers of Fruit and Vegetables in Asian Developing Countries?, UNCTAD/DITC/TED/2006/8, United Nations Publication 2007. p 28
[126] DFID, Standards as Barriers to Trade: Issues for Development, DFID Background Briefing, London, Department for International Development, 2001.
[127] Jaffee, S., et al., Food Safety and Agricultural Health Standards: Challenges and Opportunities for Developing Country Exports, Report No. 31207, the World Bank, 2005. p 67

technical and human resources to adapt their production processes to import requirements or to carry out the costly conformity assessments. GlobalGAP certification process, for example, is particularly costly and must be borne by the producer. As seen previously, GLobalGAP provides specific instructions regarding the use, the storage of pesticides and the monitoring of the residues. These procedures often require advanced farm equipments which can be costly for small-scale farmers and producers. Producers will only be delivered a certificate of compliance once they fully satisfy the inspection by the GlobalGAP approved Certificate Body.[128] In order to maintain this certificate, producers must ensure their full compliance with the standards annually and throughout this period.[129]

Maximum pesticides residues level is seen as a "potentially major threat to the future development of trade" in non-traditional fruits[130] and it can be argued that dual requirements from public and private controls can spoil some DCs' efforts to diversify into non-traditional tropical fresh fruits. This is for instance the case of Jamaica which has been a traditional supplier of sugar and bananas to the EU. While bananas were the major exports for Jamaica in the late 1980s and early 1990s, sugar has been Jamaica's dominant crop since the 17th century with the island being the main producer and exporter of sugar in the world.[131] Since then, Jamaica has long been an important Caribbean sugar producing and exporting island with sugar being the "largest agricultural export earner" accounting for 5.8% of the total export.[132] As a member of the African-Caribbean and Pacific (ACP) group and signatory of the Cotonou Agreement,[133] Jamaica has enjoyed preferential market access to the EU for

[128] Paragraph 5.2.4 "External Producer inspection by GLobalGAP (EUREPGAP) approved Certification Body" of GlobalGAP. 2009.*General Regulations, Part I General Information*: [Online].Available from: (http://www.globalgap.org/cms/upload/The_Standard/IFA/English/GRs/PartI/GG_EG_IFA_GR_Part_I_ENG_V3-1_Nov09_updateMar10.pdf) [Accessed: 15/05/2010].

[129] The GLobalGAP certificate is only valid for a period of 12 months and the Certificate Body can carry out unannounced inspection on a number of producers during this period.
Source: Paragraph 5.2.4 "External Producer inspection by GLobalGAP (EUREPGAP) approved Certification Body" of GlobalGAP General Regulations.

[130] Henson, S. and Jaffee, S., Jamaica's Trade in Ethnic Foods and Other Niche Products: the impact of Food Safety and Plant Health Standards, The International Bank for Reconstruction and Development/ The World Bank, 2005. p 38

[131] Sugar Industry Authority and Sugar Industry Research Institute. 2001.*Jamaica Sugar Industry*: [Online].Available from: (http://www.jamaicasugar.org/) [Accessed: 10/04/2010].

[132] estandards forum. February 2009.*Country Brief, Jamaica* [Online].Available from: (http://www.estandardsforum.org/secure_content/country_profiles/cp_92.pdf) [Accessed: 29/08/2009].

[133] 2000/483/EC: Partnership agreement between the members of the African, Caribbean and Pacific Group of States of the one part, and the European Community and its Member States, of the other part,

its sugar and bananas export with its main market being the UK. Jamaica was also a contracting party to the ACP-EC Sugar Protocol (SP) which is a trade preference programme for sugar provided in conjunction with the provisions of the wider Cotonou Agreement.[134] Under the SP, the EU agreed to purchase and import specified quantities of sugar from ACP countries at guaranteed prices, on a duty-free basis.[135] The SP, considered as the "lifeblood of Caribbean economies",[136] was terminated in October 2009 and this implies serious consequences on Jamaica' economy.[137]

Despite the possible decline of sugar and banana exports,[138] the tropical climate gives Jamaica particular advantages in the production of fresh fruits not found in Europe[139] and referred to as "ethnic food".[140] This is for instance the case of papaya. Papaya is a lucrative market opportunity for Jamaica and is dominated by two major producer-exporters.[141] In 1985, Jamaica's Papaya industry started with about 30 acres of land being cultivated. Since then Jamaica's position as a leading papaya exporter has grown considerably, with large exports to the UK.[142] Although, its competitive position compared to other papaya producing countries[143] has been weakening due to the 'Mosaic', a virus related to the 'Ringspot' virus causing disease of papaya and limiting production,[144] Jamaica is still an important producer of papayas.[145]

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signed in Cotonou on 23 June 2000 - Protocols - Final Act – Declarations OJ L317/3 amended [2005] OJ L 287/1.

[134] Protocol 3 on ACP sugar attached to Annex V to the Cotonou Partnership Agreement.

[135] Kerkela, L. and Huan-Niemi, E., Trade Preferences in the EU Sugar Sector: Winners and Losers, Government Institute for Economic Research, (2005). p 7

[136] McDonald, I. on behalf of the Sugar Association of the Caribbean (SAC) (2004) "The Sugar Protocol–Socio-economic aspects", paper presented at *ACP workshop on sugar*, Brussels, October.

[137] It can be expected a serious decline in Jamaica's sugar exports.

[138] Following the banana disputes in GATT/WTO, the EU had to reduce its bananas tariff regime. Such change facilitates market access for Latin American bananas producers and exporters but erodes the competiveness of ACP Caribbean countries.

[139] For instance papaya and mango.

[140] Henson, S. and Jaffee, S., Jamaica's Trade in Ethnic Foods and Other Niche Products: the impact of Food Safety and Plant Health Standards, The International Bank for Reconstruction and Development/ The World Bank, 2005. p 2

[141] Valley Fruit Co. Ltd. and Advance Farms Technologies Jamaica Ltd.

[142] Export Jamaica website. *Papaya Exports*: [Online].Available from: (http://www.exportjamaica.org/papaya/papayaexports.htm) [Accessed: 15/05/2010].

[143] Mexico and Brazil have emerged as the market leaders in 2003.
Source: Henson, S. and Jaffee, S., Jamaica's Trade in Ethnic Foods and Other Niche Products: the impact of Food Safety and Plant Health Standards, The International Bank for Reconstruction and Development/ The World Bank, 2005. p 44

[144] Ibid.

[145] See: Export Jamaica website. *Papaya Exports*: [Online].Available from: (http://www.exportjamaica.org/papaya/papayaexports.htm) [Accessed: 15/05/2010].

In light of the erosion of tariff preferences for sugar, Jamaica tried to diversify into fresh fruits and vegetables but such shift has generally been disappointing.[146] This problem has been explained by the high competition in the export of tropical products with other suppliers in Africa or Latin America which sometimes do not face the same capacity weaknesses than Jamaica.[147] These constraints were reinforced by Jamaica's lack of technical and administrative arrangements to meet demanding SPS measures and requirements in the EU market. In general, small farmers,[148] who provide the major part of the commodities for exports, use pesticides without receiving any training and are unaware of their appropriate use, including GAP, application procedures, and preharvest intervals.[149] Thus, limits on pesticides residues imposed by EU governments and the private sector are an important issue for Jamaican exports of fresh fruits.

B- The WTO: a forum to challenge SPS requirements

The way EU governments control pesticide residues has an important impact on DCs exporting tropical fresh fruits since they represent an important part in the demand of pesticides for production security purposes.[150] Alongside to this, private standards, by imposing additional requirements with additional financial burden, can increase trade barriers and therefore "decrease market size or limit the number of firms participating."[151] It is clear that SPS requirements can serve as market access barriers and at the international level, the World Trade Organisation (WTO) established in 1995 the Agreement on the Application of Sanitary and Phytosanitary (the SPS Agreement) in order to "improve the human health, animal health and phytosanitary situation in all Members"[152] and to reduce "trade distorting aspects" of food safety

[146] Mitchell, D. O., Sugar in the Caribbean: Adjusting to Eroding Preferences, World Bank Policy Research Working Paper 3802, (2005). p 18
[147] Henson, S. and Jaffee, S., Jamaica's Trade in Ethnic Foods and Other Niche Products: the impact of Food Safety and Plant Health Standards, The International Bank for Reconstruction and Development/ The World Bank, 2005.
[148] Smallholder farmers are generally composed of elderly Jamaicans.
[149] Henson, S. and Jaffee, S., Jamaica's Trade in Ethnic Foods and Other Niche Products: the impact of Food Safety and Plant Health Standards, The International Bank for Reconstruction and Development/ The World Bank, 2005. p 39
[150] Carvalho, F. P.,"Agriculture, pesticides, food security and food safety" (2006) 9 (7-8), Environmental science and policy, 685-692.
[151] Reardon, T. and Farina, E.,"The rise of private food quality and safety standards: illustrations from Brazil" (2002) 4 (4), International Food and Agribusiness Management Review, 413-421. p 417
[152] Preamble of the SPS Agreement.

measures.[153] Thus, there is no doubt that developing countries can challenge SPS requirements imposed by other trading partners.[154] However, a problem arises as private standards do not fall under the WTO's jurisdiction.

In June 2005, Saint Vincent and the Grenadines complained at the SPS Committee meeting[155] that EurepGAP's SPS requirements for exporting bananas and various fresh fruits and vegetables to the United Kingdom's supermarkets were higher than those provided by the governments restricting international trade. From the viewpoint of this island, private standards schemes present numerous challenges to small vulnerable economies and thus do not comply with the provisions of the SPS Agreement.[156] Jamaica also mentioned that it was facing the same problems with the EurepGAP standards for fresh fruits and vegetable exports.[157] These concerns were supported by other DCs.[158] The SPS Agreement requires that Members take reasonable measures to ensure that "non-governmental entities" within their territories meet with the rules of this Agreement.[159] Such provisions implies that if GlobalGAP (EurepGAP), as private entity, can be regarded as a non-governmental entity, it would be subject to the SPS provisions.[160] Although the concept of "non-governmental entities" is not defined by the SPS Agreement, the Technical Barriers to Trade (TBT) Agreement refers to "non-governmental standardizing body".[161] It is believed that such concept refers to "private entities which have been entrusted by government with the performance of certain tasks or which have otherwise a special legal status."[162] In light of this, it is argued that GlobalGAP (EurepGAP) with no legal power and not

[153] Roberts, D. and Unnevehr, L.,"Resolving trade disputes arising from trends in food safety regulation: the role of the multilateral governance framework" (2005) 4 (3), World T.R., 469-497. p 469
[154] The Dispute Settlement Body of the WTO is responsible for resolving disputes between trading partners.
[155] WTO, Committee on Sanitary and Phytosanitary Measures, meeting held on 29-30 June 2005, G/SPS/R/37/Rev.1, 18 August 2005. para. 16
[156] WTO, Committee on Sanitary and Phytosanitary Measures, "Private industry standards" Communication from Saint Vincent and the Grenadines, G/SPS/GEN/766, 28 February 2007.
[157] WTO , Committee on Sanitary and Phytosanitary Measures, meeting held on 29-30 June 2005, G/SPS/R/37/Rev.1, 18 August 2005. para. 17
[158] Argentina, Ecuador, Mexico and Peru. G/SPS/R/37/Rev.1, paras 19 and 20.
[159] Article 13 of the SPS Agreement.
[160] Henson, S. The role of public and private standards in regulating international food markets. In: *Food Regulation and Trade: Institutional Framework, Concepts of Analysis and Empirical Evidence", IATRC Summer Symposium.* Bonn, 28-30 May 2006.
[161] Article 4.1 of the TBT Agreement.
[162] Lee, G. C.-H., Private Food Standards and their Impacts on Developing Countries, European Commission, DG Trade Unit G2, 2006.

entrusted by the EU governments cannot be regarded as a non-governmental body and therefore not falling under the SPS Agreement.[163] As a consequence, DCs cannot rely on the SPS Agreement in order to regulate standards imposed by GlobalGAP and must therefore comply with the rigid and costly standards to ensure successful access to the EU market for tropical fruits.

Conclusion

Export of tropical fresh fruits from developing countries has largely increased over the last decade stimulated by consumers demand for healthy food and advances in transport. These imports were facilitated by EU preferential access agreements granting to the beneficiaries better market access through reduced tariffs.[164] Despite the creation of such opportunities, SPS requirements are still the major trade obstacles preventing DCs' products entering the EU market.[165] These countries are trying to ensure food productivity while facing up tropical climatic conditions conducive to the spread of crop pests and plant diseases. As a consequence, farmers rely heavily on agrochemicals in order to maintain constant production to increase exports. On the other hand, the EU government controls the use of pesticides within its market by assessing their impact on human health and the environment. With pesticides generally leaving residues in and on food, the EU also established the maximum residues limits that are permitted in food and which apply to both domestic and imported fruits imported. The checks of permitted residues affect developing countries which, because of tropical climatic conditions, are particularly affected by a wide spread of pests and disease.[166]

In addition to this, the private sector formulated its own rules and standards for agricultural and food products which are not legally mandated in a regulatory sense

[163] Henson, S. The role of public and private standards in regulating international food markets. In: *Food Regulation and Trade: Institutional Framework, Concepts of Analysis and Empirical Evidence", IATRC Summer Symposium.* Bonn, 28-30 May 2006.
[164] European Commission, "White Paper on Food Safety in the European Union", COM (1999) 719 final, 12 January 2000.
[165] Bureau, J.-C., Disdier, A.-C. and Ramos, P., A Comparison of the Barriers Faced by Latin American and ACP Countries' Exports of Tropical Products, ICTSD Programme on Agricultural Trade and Sustainable Development, 2007.
[166] Jaffee, S. and Henson, S., Standards and agro-food exports from developing countries: rebalancing the debate, World Bank Policy Research Working Paper 3348, June 2004. p 2

but compliance can be *de facto* mandatory for suppliers.[167] These standards, such as the GlobalGAP Integrated Farm Insurance Standard, apply at all levels of a chain and complement EU legislation by imposing higher and wider requirements for pesticides use and residues on developing countries. The benefits of private food schemes for DCs export of fresh fruits to the EU market are widely recognised. In setting high compliance requirements, private schemes ensure that these products are compliant with EU legislation. However, compliance is particularly costly for developing countries which lack the administrative, technical, financial and scientific capacity to participate effectively in the creation and implementation of these requirements.[168]

Because of EU tariff preferences erosion for traditional food products, developing countries socio-economically dependant on agro-food exports tried to diversify their production on food that are having a high demand in international markets. Climatic conditions give Caribbean countries such as Jamaica, the possibility to grow and exports tropical fruits however, the combination of private and public SPS requirements, recurrent costs of compliance and controls imposed by the EU market are significant barriers to their exports and undermine their competition position. Contrary to the EU which aims to maintain food safety within its market, the main concern for developing countries is to grow fruits and other crops for exports while facing increasing numbers of tropical plant pests and diseases. Meeting EU pesticides residues requirements is a real problem for developing countries and this will seriously increase given the climate change role in food safety. The changing climate resulting in increased temperature affects the numbers of pests and this will inevitably lead to more pesticides use and unsafe residue levels in food.

[167] Henson, S. The role of public and private standards in regulating international food markets. In: *Food Regulation and Trade: Institutional Framework, Concepts of Analysis and Empirical Evidence", IATRC Summer Symposium.* Bonn, 28-30 May 2006.
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Europe is providing increasing market opportunities to emerging tropical countries, as it offers a large and stable demand for fresh fruit and vegetables with significant purchasing power. The need for year-round availability and the interest in new exotic produce leads to Europeâ€™s continuing dependence on external suppliers. However, this process is not easy because of the perishable nature of the produce and the financial and technical capacity required. Europe is very demanding when it comes to food safety.Â But meeting the European requirements is also an opportunity to succeed at a higher level. What are the most common requirements and standards? What are the key recommendations for success in exporting to Europe? Food safety standards and regulations are essential to ensure food is safe at all points along supply chains in both international trade and within nations. Trade is closely linked to food security, nutrition and food safety.Â A Codex standard has taken on average 4â€“5 years to develop, but, to adapt to the rapid pace of change, the CAC members now meet annually and evaluation is conducted in a continuous process managed by specialist committees. Since its inception in 1963, the CAC has produced: 223 food safety standards.Â The Codex has raised awareness of food safety in member countries and encouraged them to introduce new food legislation, adopt Codex-based standards and establish or strengthen agencies responsible for monitoring compliance with regulations. Accessing market opportunities: quality and safety standards of products (e.g. extent to which they are authentic, ethical, healthy, safe, etc.). At the same time, international agreements and institutions try to make sanitary and quality standards objective and predictable in order not to harm trade.Â Food safety regulations and standards evolve differently around the world as countries respond to food safety crises and prepare for perceived exposure to emerging food safety risks.Â As developing countries work to meet higher and evolving food safety standards, they have raised concerns about whether the increasing standards will impede their participation in world trade (Unnevehr and Roberts, 2003; FAO, 2004a; Henson et al., 1999; Athukorala and Jayasuriya, 2003). Abstract Prominent food scares and changes in the international trading environment have brought food safety to the forefront of international agri-food policy concerns. Recent trends include an increased emphasis on food safety regulations in international trade, a tightening of standards in the North, a reorientation of private sector quality assurance techniques towards preventive management, and a corresponding shift by regulatory agencies toward process-based standards including â€œmandatory HACCP.â€ There is also a new focus on consumersâ€™ role in the food safety equation, both as actors in ... ADB Economics Working Paper Series No. 154. Impact of Food Safety Standards on Processed Food Exports from Developing Countries. Juthathip Jongwanich April 2009.Â Developing countries refer to low- and middle-income countries according to the World Bank classification. Impact of Food Safety Standards on Processed Food Exports from Developing Countries | .Â Although processed food exports in developing countries have continuously increased, not all countries have shared in the benefits. In general, countries belonging to upper-middle and middle-income countries according to the World Bank classification have performed better in expanding processed food exports than low-income countries.