



# Non-tariff measures affecting agro-food trade between the EU and Africa

Summary of a workshop

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This report has been prepared through the collaboration of Aída Gonzalez Mellado<sup>1</sup> (chapter 4), Sophie H elaine<sup>1</sup> (chapter 1 and 6), Marie-Luise Rau<sup>2</sup> (chapter 2 and 3) and Monika Tothova<sup>3</sup> (chapter 5).

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## Acronyms

<b>ACP</b>	African, Caribbean and Pacific countries
<b>BRC</b>	British Retailer Consortium
<b>CIF</b>	Cost, insurance and freight
<b>Codex</b>	Codex Alimentarius guidelines and codes of practice recommended under the Joint FAO/WHO Food Standards Programme
<b>DG AGRI</b>	Directorate-General “Agriculture and Rural Development”
<b>DG TRADE</b>	Directorate-General “Trade”
<b>EBA</b>	Everything but Arms
<b>EU</b>	European Union
<b>EU-27</b>	27 EU Member States after the 2007 enlargement
<b>EPAs</b>	Economic Partnership Agreements between the EU and developing countries
<b>Eurostat</b>	European Statistical Office located in Luxembourg
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FOB</b>	Free on board
<b>GE</b>	General equilibrium
<b>GMOs</b>	Genetically Modified Organisms
<b>HACCP</b>	Hazard Analysis Critical Control Point
<b>HS</b>	Harmonised system of trade data
<b>IPFSAPH</b>	International Portal on Food Safety, Animal and Plant Health
<b>IPTS</b>	Institute for Prospective Technological Studies
<b>ISO</b>	International Standardisation Organisation
<b>INRA</b>	Institut Scientifique de Recherche Agronomique, France
<b>FP7</b>	7 <sup>th</sup> Framework Programme of the European Commission
<b>JRC</b>	Joint Research Centre of the European Commission
<b>LDCs</b>	Least developed countries
<b>LEI</b>	Agricultural Economics Research Institute, part of Wageningen University
<b>MAST</b>	Multi-Agency Support Team
<b>MED</b>	Mediterranean countries
<b>MRLs</b>	Maximum residue levels
<b>NTMs</b>	Non-tariff measures
<b>NTBs</b>	Non-tariff barriers
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>PE</b>	Partial equilibrium
<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>UNIDO</b>	United Nations Industrial Development Organisation
<b>US</b>	United States of America
<b>SPI</b>	Sociedade Portuguesa de Inovação
<b>SPS</b>	Sanitary and phytosanitary
<b>TDCA</b>	Trade, Development and Cooperation Agreement
<b>TE</b>	Tariff equivalent
<b>TRAINS</b>	Trade Analysis and Information System (database)
<b>TBT</b>	Technical barriers to trade
<b>TRQ</b>	Tariff rate quota
<b>WHO</b>	World Health Organisation
<b>WTO</b>	World Trade Organisation

# 1 Background of the workshop and African trade with the EU

## Background and objectives

This report contains a summary and the presentations of the workshop on "Non Tariff Measures affecting agro-food trade between the EU and Africa", organised by the Institute for Prospective Technological Studies (IPTS) of the European Commission's Joint Research Centre (JRC). The workshop took place at IPTS in Seville on 9 and 10 September 2010.

The major objectives of the workshop were to:

- shed light on African-European trade relations in agro-food products,
- analyse NTMs affecting certain African products,
- identify ways of including NTMs in the models used in IPTS to analyse agricultural trade and identify future research needs,
- promote discussion between experts with different backgrounds: academics, consultants, policy makers and exporters.

This workshop is also a continuation of the work IPTS started on non-tariff measures (NTMs) and the EU - Africa/MED trade relationship. IPTS commissioned a study on "African Agricultural and Food Exports to the EU: the Importance of Non-Tariffs Measures" from the Sociedade Portuguesa de Inovação (SPI), who carried out a survey. IPTS staff members have used the results of the NTM survey conducted in this study in further work (Gonzalez Mellado, 2010a and 2010b) which was also presented in two paper contributions at the workshop.

## African trade with the EU

In the conference "EU Trade Policy Towards Developing Countries", held in Brussels on 16 March 2010, the European Trade Commissioner, Karel de Gucht, declared: *"It is a sad but undeniable fact that ACP countries' share of EU imports has steadily shrunk over the past decades – despite the EU giving them more open access than many other developing countries - and still concentrates on only a handful of commodities. We have to reverse this trend."*

The access to the EU is indeed widely open for the least developed countries (LDCs). Within the program "Everything But Arms" (EBA) the main exports of LDCs have been able to enter the EU market without any duties since 2001. The ACP countries' trade agreements,

favouring ACP access to the EU market, started in 1964 with the Yaoundé Convention, followed by four Lomé Conventions. In 2002 the EU started negotiating Economic Partnership Agreements (EPAs). There is a specific agreement between the EU and South Africa, the Trade, Development and Cooperation Agreement (TDCA), which provisionally entered into force in 2000 and was fully implemented in 2004. This agreement foresees a progressive tariff reduction both in the EU and in South Africa. With the Mediterranean (MED) countries the EU has been establishing association agreements entering progressively into force (for example the EU Association Agreement with Tunisia in 1998 or with Morocco in 2000).

Despite all these agreements, Africa represented only 2 per cent of the world trade value in 2008. Over the period 2000-2008 the total value of African exports more than doubled in real 2000 US\$; however this increase was mainly due to the augmentation of crude oil price, the oil and mineral fuels representing 56 per cent of total African exports in 2008<sup>4</sup>. Agricultural products<sup>5</sup> represented no more than 7 per cent of the African exports value in 2008. Agricultural products made up for a higher share of African and Mediterranean exports to the EU - according to the Eurostat - Comext trade data, this share was 10 per cent in 2009, and 20 per cent of EU agricultural imports came from this area. In real terms African exports to the EU-27 stagnated between 2000 and 2006. Between 2007 and 2009 the increase in export value observed is probably mainly linked to the increase of the cocoa price. This illustrates another issue highlighted by the Trade Commissioner in the conference mentioned above: African trade "*...concentrates on only a handful of traditional commodities*". This is particularly true for the Ivory Coast and Cameroon where cocoa and banana represent around 90 per cent of the agricultural exports.

The trade data analysis showed that trade between Africa and the EU did not expand much, despite the various trade agreements. It highlighted that even though tariffs are still important, there may be other factors limiting trade: NTMs, production capacities, supply constraints, etc.

## **Workshop Agenda**

The workshop looked in detail at NTMs that potentially affect exports from African countries. The first day of the workshop started with a session on the definition of such measures, followed by sessions focusing on methods to detect NTMs, as well as on data collection.

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<sup>4</sup> Source: Comtrade

<sup>5</sup> The agricultural products were aggregated based on the WTO definition.

Quantification issues, i.e. the costs and benefits of NTMs and their modelling in order to determine the NTM impact were covered on the second day of the workshop. Alongside more general paper contributions, case study work related to Africa and/or MED countries were presented and here the workshop provided the unique possibility of looking at NTMs from an African perspective. The full agenda of the workshop is included in Annex 1.

The present report gives an overview of the topic of NTMs based on the contributions and summarises the main points that were made in the presentations and discussed during the workshop.

## **2 Definition of NTMs**

The term “NTMs” covers a large number of measures that are not tariffs, and the definition of NTMs is thus rather comprehensive, with the list of NTMs being indeed long. The workshop aimed to be broad and open to include any of them. The discussion at the workshop showed that the definition of NTMs is not really operational and practical for analyses. It seems useful to narrow down the definition since NTMs comprise different measures with distinct characteristics and possibly diverging effects. The workshop brought together people from different disciplines and backgrounds, who have been working on NTMs with different perspectives, such as the administration, business, policy and research perspective. While the presentations at the beginning of the workshop brought forward the commonly accepted definition of NTMs (see presentations von Lampe, OECD; Nicita, UNCTAD and Rau, LEI), the discussion revealed that the understanding of what NTMs actually are, differed considerably amongst some of the participants. As argued in the discussion, the term “NTMs” refers to measures and does not refer to the conditions prevailing in countries, such as infrastructure, qualification and governance for example. It should be noted, however, that the effects of NTMs tend to be triggered by them, such that the lack of efficient means of transportation and roads for example contributes to a possible trade-restricting effect of NTMs.

Using the classification of the United Nations Conference on Trade and Development (UNCTAD), it is differentiated between core NTMs, such as tariff rate quotas and export taxes for example, and other less traditional measures. Table 1 summarises the main categories of the current NTM classification by UNCTAD that concentrate on trade policy

measures imposed by governments<sup>6</sup>. As shown, sanitary and phytosanitary (SPS) measures and technical barriers to trade (TBT) measures are respectively defined as specific categories in the NTM classification. In the more detailed description of both SPS and TBT measures, it is explicitly distinguished between i) requirements, which need to be fulfilled to gain market access, and ii) conformity assessment, which verifies that respective requirements are actually met. This difference between requirements and conformity assessment makes sense since the latter is more concerned with creating trust between buyers and sellers by providing reliable information than prescribing product characteristics and/or production methods.

Requirements can be further classified according to what is regulated. These classifications commonly define product requirements on the one hand and process requirements on the other. Product requirements target the physical characteristics of products, often in terms of threshold values of ingredients that are not to be exceeded (for example maximum residue levels of pesticides, veterinary drugs or additives) or product composition related to the identification and naming of products or product categories. In contrast, process standards prescribe requirements for production processes, handling and storage. With regard to food safety, the requirement to implement Hazard Analysis Critical Control Points (HACCP) is a good example of process standards in the agro-food sector. Compliance with process standards can usually not be detected in the final product, and some kind of certification system is necessary to prove compliance. Process standards demanded by the importing country are considered as behind border measures because the production processes take place in the country of the exporter.

Following the UNCTAD classification, the framework of regulatory elements developed within the EU's FP7 project "NTM impact" (<http://www.ntm-impact.eu/>) is worth mentioning. In order to compare regulations and standards across countries and products, the "NTM impact" project identifies the following three main groups of requirements: i) firm-level requirements, ii) conformity assessment and iii) requirements for countries or national authorities; see Rau et al. (2010).

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<sup>6</sup> Focusing on trade policy instruments, the classification by UNCTAD does not mention any measures by the private sector, and the databases using this classification hence do not cover the private sector. For more details about the classification see <http://ntb.unctad.org/docs/Classification%20of%20NTMs.pdf>

**Table 1: UNCTAD classification of NTMs**

<b>(A) Sanitary and phytosanitary measures (SPS)</b>	Sanitary and phytosanitary measures include laws, decrees, regulations, requirements, standards and procedures to protect human, animal or plant life or health.
<b>(B) Technical barriers to trade (TBT)</b>	Technical barriers to trade are regulations/standards referring to technical specifications of products and conformity assessment systems thereof.
<b>(C) Other technical measures</b>	Pre-shipment inspection, special customs formalities not related to SPS/TBT and other special customs formalities not related to SPS/TBT.
<b>(D) Price control measures</b>	Price control measures are implemented to control the prices of imported articles in order to: support the domestic price of certain products when the import price of these goods is lower; establish the domestic price of certain products because of price fluctuation in domestic markets, or price instability in a foreign market; and counteract the damage resulting from the occurrence of "unfair" foreign trade practices.
<b>(E) Quantity control measures</b>	Quantity control measures are aimed at limiting the quantity of goods that can be imported, regardless of whether they come from different sources or one specific supplier. These measures can take the form of restrictive licensing, fixing of a predetermined quota, or through prohibitions.
<b>(F) Para-tariff measures</b>	Other measures that increase the cost of imports in a manner similar to tariff measures are known as para-tariff measures. Four groups are distinguished: customs surcharges; additional taxes and charges; internal taxes and charges levied on imports; and decreed custom valuation.
<b>(G) Finance measures</b>	Financial measures are intended to regulate the access to and cost of foreign exchange for imports and define the terms of payment. They may increase import costs in the same manner as tariff measures.
<b>(H) Anti-competitive measures</b>	Measures to grant exclusive or special preferences or privileges to one or more limited groups of economic operators, for social, fiscal, economic or political reasons.
<b>(I) Export related measures</b>	Export related measures are measures applied by the government of the exporting country on exported goods.
<b>(J) Trade related investment measures</b>	Local content measures, which restrict the level of imported components and trade balancing measures.
<b>(K) Distribution restrictions</b>	Restriction to limit and rule the way the products are distributed. It may be controlled through additional licensing or certification requirements.
<b>(L) Restriction on post-sales services</b>	Measures restricting producers of exported goods in exporting countries providing post-sales service in the importing country.
<b>(M) Subsidies</b>	Financial contribution by a government or government body to a production structure, be it a particular industry or company, such as the direct transfer of funds or potential transfer of funds (for example grants, loans, equity infusions), payments to a funding mechanism and income or price support.
<b>(N) Government procurement restrictions</b>	Measures controlling the purchase of goods by government agencies, generally by giving preference to national providers.
<b>(O) Intellectual property</b>	Intellectual property legislation covers patents, trademarks, industrial designs, layout designs of integrated circuits, copyrights, geographical indications and trade secrets.
<b>(P) Rules of origin</b>	Rules of origin cover laws, regulations and administrative determinations of general application applied by government of importing countries to determine the country of origin of goods.

Source: Presentation von Lampe (OECD).

Initially the workshop considered any type of NTMs, but most presentations dealt specifically with SPS and TBT measures given their increased importance in international agro-food trade and their relevance for the private as well as public sector. That is, one important focus of the workshop was on SPS and TBT measures that prescribe the requirements for foreign products to be sold on the domestic market of importing countries. The case study work presented at the workshop took the perspective of African firms and thus concentrated on the import requirements that African exporters face when exporting to the markets of the EU Member States.<sup>7</sup> If the governmental requirements of the importing country are fulfilled, exporters are in principle allowed to sell on the respective markets. However, the requirements by the private sector, which actually buys foreign products to be used as inputs or to be sold to consumers, also need to be fulfilled in the business. For African agro-food exports, public and private requirements are important and the workshop therefore captured both types of requirements. The difference between public and private requirements is further elaborated below.

### **SPS and TBT measures**

As described in Table 1, SPS and TBT measures comprise regulations and standards that stipulate the conditions under which international trade takes place. SPS measures aim to provide a certain level of food safety for consumers, as well as protecting human, animal and plant health. Other quality aspects such as organic production or fair trade, for example, go beyond safety aspects and are thus not considered SPS measures. In contrast to SPS measures, TBT measures refer to labelling and marketing standards, as well as norms for sizes, quality classes and other physical attributes of products or groups of products, amongst others. The distinct characteristics of SPS and TBT measures are hence given by the objectives the measures attempt to achieve. Focusing on SPS measures, the aim is to guarantee safe food as well as plant and animal health, as already mentioned. In order to attain these goals, governments typically set minimum requirements for which no price premium is obtained. Firms can obtain higher prices for specific quality characteristics beyond food safety, given that the quality level is communicated to consumers (via labels) and that consumers are

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<sup>7</sup> The EU requirements are by large harmonized across the Member States, but there are some exceptions and the resulting differences of requirements were included in some of the case studies presented (for example presentation Nimenya, Université Catholique de Louvain la Neuve). In general, EU requirements are formulated in regulations and directives, and the latter give the EU Member States flexibility for defining their own requirements. EU regulations on the other hand provide minimum requirements that apply to all EU Member States but the EU Member States are allowed to impose tighter requirements in certain cases of national interest.

willing to pay for quality. The price premium would represent additional costs for providing a differentiated and potentially better quality product, no matter where the product originally comes from such that both foreign and domestic firms can reap the profits.

While the potential barrier due to SPS and TBT measures is often emphasised the benefits have gradually been acknowledged in the conceptual thinking about such measures. They play a crucial role in international agro-food trade, where trade is a vector of externalities (see presentation von Lampe, OECD). Next to health and safety benefits, the benefits of requirements being in place for example range from reduced information costs, which occur due to buyers and sellers being situated in different countries and the characteristics of agro-food products, to increased efficiency in the production process, thereby lowering firms' production costs.

In general, the requirements for foreign products usually reflect the domestic requirements in the importing country, and according to the international trade rules, the SPS Agreement and the TBT Agreement of the World Trade Organisation (WTO) respectively attempt to ensure that standards are not misused as disguised protectionist measures in favour of domestic producers. While maintaining the sovereign right and obligation of countries to set their own regulations and standards, countries are encouraged to base their import requirements on internationally agreed benchmarks, in the case of food safety for example the Codex Alimentarius standards and guidelines<sup>8</sup>. The two agreements contain detailed provisions on how the WTO Member States deal with possible SPS and TBT issues at multi-lateral level.

### **Public versus private requirements**

While private standards refer to the requirements of the private sector, public standards are requirements demanded by governments. Public standards imply that requirements are referred to in national food law or international rules, which aim to regulate the import conditions in international agro-food trade. Unlike private standards, they can thus become legally mandatory. Due to their formulation in legal documents, governmental requirements have often been regarded as mandatory while the requirements by the private sector are voluntary per definition. However, governments may also choose to endorse voluntary standards that typically go beyond the minimum requirements for food safety and other

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<sup>8</sup> The Codex Alimentarius refers to food standards, guidelines and codes of practice recommended under the Joint FAO/WHO Food Standards Programme. The International Plant Protection Convention (IPPC) and the World Organization for Animal Health (OIE) respectively promote international standards and guidelines for animal and plant health issues.

quality aspects, for example organic governmental standards. Similarly, private standards can become quasi-mandatory if a large share of suppliers or retailers requires compliance with them. In the discussions at the workshop, the GlobalGAP standards<sup>9</sup> were often mentioned as being particularly relevant for African exporters that wish to supply the EU market. Other relevant private standards are those of the British Retailer Consortium (BRC) and the International Organisation of Standardisation (ISO) (for example the ISO 22000 series on food safety management systems), both of which are business-to-business standards in the agro-food sector.

In order to distinguish between governmental and private standards, the criterion of mandatory and voluntary requirements seems to be limited. Hence other characteristics should be considered and would need to be taken into account in the analysis of private standards. The main differences between public and private requirements arise in the development and setting of requirements as well as in their implementation and enforcement, which seem to reflect the underlying motivation behind public and private standards. In general, both governments and the private sector set standards in order to tackle information problems and externalities occurring in the production and exchange of products. Private standards can be considered consumer-driven in the sense that the private sector pursues the commercial interest of providing food products of high safety and quality levels as demanded by buyers and consumers, thereby maintaining and/or increasing market shares. Another important motivation of private standards stems from the need to exert better control over food safety and quality issues as well as to coordinate increasingly international supply chains. That is because private standards can provide firms in general and retailers of supermarket chains in particular with a level of protection against food safety and quality failures which otherwise could cause reputational brand damage and lead to a possible loss of customer confidence and consequently business. At the workshop, the case study work on tomatoes (presentation El-Otmani, University Hassan II, and Aloui, Agro Concept) and olives (presentation van Doorslaer, IPTS) looked into the GlobalGAP requirements for these products from North Africa, as demanded by European retailers. Here, a supply chain approach was chosen for the analysis of the trade but also firm-level effects (in terms of costs and benefits).

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<sup>9</sup> Starting as a private standards initiative of European retailers and supermarket chains, GlobalGAP has formerly been known as EurepGAP. The change of name indicates that EurepGAP is now established in the global marketplace, serving as a key reference for retailers/supermarket chains worldwide. For detailed information about GlobalGAP see <http://www.globalgap.org>.

## **NTMs versus NTBs**

NTMs can hamper trade between countries, and emphasising this potentially negative trade effect NTMs are often considered to be trade barriers. As such the term “NTMs” has often been used interchangeably with the term “NTBs”, non-tariff barriers to trade. It is important to understand the difference between the two terms. Using the term “NTMs” simply relates to the measures whereas the term “NTBs” indicates that the measure is trade-restricting, thereby also giving information about the impact of the measure. However, NTMs do not necessarily present barriers to trade, which reduce or even block trade entirely as in the case of an import ban for example. For example, the existence of SPS and TBT measures is critical for international trade between countries because they allow risks and information problems between sellers and buyers to be tackled and the resulting benefits can potentially lead to global welfare gains, in addition to health and safety benefits. In fact, it can be argued that without such measures trade would not take place. For research, it seems appropriate to use the term “NTMs” as the impact should not be anticipated or pre-determined before the analysis. Most importantly, the costs and benefits of the measures need to be considered in order to ensure a balanced and scientifically sound analysis.

## **3 Analysing NTMs**

Analysing NTMs is a challenging task and different analytical approaches and methods have been applied. The aim of such analysis is on the one hand to identify incidences of NTMs and on the other to quantify the effect of NTMs on trade but also further reaching economic and welfare effects. The main challenges are related to data issues, including lack of data, data collection and measurement. In particular, the analysis of NTMs often requires some kind of matching up of data. For example, SPS and TBT requirements are usually defined by industry classifications and trade flows are given according to the classification of trade data. Hence, the data of different classification and sources need to be matched in order to analyse the NTM impact at hand. In this chapter, the data sources mentioned in the presentation on analysing NTMs will first be introduced. This is followed by an overview of the approaches used to detect and quantify NTMs, summarising the main points presented and discussed at the workshop.

## Data sources

There have been considerable attempts to collect data on NTMs and to make this information available for public use. The Trade Analysis and Information System (TRAINS) database provided by UNCTAD can be considered the most comprehensive source of information on NTMs implemented by governments and has been frequently used in research.<sup>10</sup> The TRAINS database records incidences of NTMs that are reported to the WTO as well as changes and new regulations with regards to the measures that apply to imports. The respective WTO notifications are documented by the type of measures according to products (HS codes) and countries. Thus, the TRAINS database relies on self-reporting, thereby in effect "punishing" diligent reporting. Currently, the TRAINS database is in the process of being updated. Following the expertise and input of a Multi-Agency Support Team (MAST), new up-to-date information about NTMs is being collected. For more information see MAST (2008).

Another recent attempt to collect data on NTMs was undertaken within the EU's FP7 project "NTM impact". Within this project, regulations and standards that prescribe the import requirements for a selection of agro-food products, which are relevant to trade between the EU and ten main trade partner countries, are compared across countries. Looking only from EU exporters' perspective, the project uses the EU import requirements as the benchmark for comparison. Detailed information on the data and the subsequent analysis can be found on the webpage of the "NTM impact" project at <http://www.ntm-impact.eu>. In addition, the European Commission provides a comprehensive and up-to-date list of the EU import requirements according to product and Member State (destination country) in order to support exporters from developing countries (see <http://exporthelp.europa.eu>).

Other sources of information on NTMs are complaint registers. At the international multi-lateral level, the WTO Secretariat documents the member countries' trade concerns regarding NTMs (notified and not notified) in regular summary reports. For the reports on SPS trade concerns see, for example, the International Portal on Food Safety, Animal and Plant Health (IPFSAPH) at <http://ipfsaph.org>. Trade concerns about SPS and TBT measures are typically raised in the meetings of the SPS and TBT Committee of the WTO. More severe disagreements can be brought to the WTO dispute settlement body. As noted during the workshop, developing countries seldom use the opportunity to put NTM issues in front of the

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<sup>10</sup> The TRAINS database is publically accessible through the World Integrated Trade Solution (WITS) software developed by the World Bank: <http://wits.worldbank.org/wits/>.

WTO, mainly due to resource and human capital constraints as well as to the usually lengthy duration of dispute settlements. In this sense, reports on trade concerns and WTO disputes only give limited information about NTMs, in particular from the perspective of developing countries, and no reporting does not imply that NTMs are not prevalent and do not cause issues for exporters.

### **Methods to detecting NTMs**

For detecting the occurrence of NTMs, surveys are often used and some of the case studies presented at the workshop involved interviews with African exporters that sell on the EU market (presentations Gay, IPTS, Gonzalez Mellado, IPTS, El-Otmani, University Hassan II, and Aloui, Agro Concept). Surveys give useful first hand information, but several challenges deserve special attention. Besides the issue of ensuring representative results, surveys of NTMs are particularly prone to biases. For example, firms generally seem to have difficulties in identifying NTM issues and attributing the consequences in terms of costs and benefits to different measures. Furthermore, firm-level information about NTMs is often confidential and it is likely that firms strategically answer respective questions, particularly in the hope of possible compensation and support to facilitate market access to foreign markets. Surveys on NTMs contain the perceptions of the firms or exporters interviewed and their results need to be interpreted with care.

Another standard approach uses frequency measures, which count the number of NTMs and/or changes in NTMs to calculate coverage measures for the volume/value of imports subject to different types of NTMs, usually expressed as a percentage of total imports. Such coverage measures may give some information on the potential trade impact, but they do not explicitly quantify the NTM impact. While calculating coverage measures is rather straightforward, one of the main issues relates to endogeneity as observed trade data is used. Furthermore, a high NTM count does not automatically lead to more trade frictions and thus a more pronounced trade effect (see presentation Rau, LEI)

In the discussion, the possibility of comparing observed and potential trade was mentioned as an indication of those NTM incidences that hamper trade between countries. Such a comparison would look at exports, the domestic production and consumption, whereby the data should refer to quantities rather than values. Using trade data, the endogeneity issue already mentioned above obviously occurs as a main challenge. Other challenges relate to

matching the different data classification, i.e. HS codes for trade data and the codes of production data, the detailed information required and resulting aggregation issues.

Using the TRAINS database, the calculations by the OECD show that the governments of OECD countries impose NTMs on almost all agro-food products, except for a couple of unprocessed fibres (silk, cotton, flax, hemp). While animal products are expected to be particularly affected by NTMs, it can be argued that NTMs are equally important for plant products, given upcoming issues related to GMOs, environmental damage and sustainability. Overall, about 45 per cent of all NTMs focus on human health issues, followed by plant health measures (20 per cent) and animal health measures (18 per cent). For further details see van Tongeren and Disdier (2010). Table 2 shows the number of NTMs reported in the TRAINS database according to type of measure. Amongst the approximately 14,000 NTMs notified, labelling requirements are most frequently reported, followed by requirements for product characteristics.

**Table 2: Number of NTMs according to type of measure**

TRAINS Code	TRAINS Definition	Number of NTMs notified	Share (%)
8130	Labelling requirements	4,375	30.54
8110	Product characteristics requirements	3,441	24.02
6170	Prior authorization for sensitive product categories	2,664	18.60
8150	Testing, inspection and quarantine requirements	2,463	17.19
6370	Prohibition for sensitive product categories	587	4.10
8140	Packaging requirements	378	2.64
8160	Information requirements	193	1.35
8120	Marking requirements	115	0.80
6270	Quotas for sensitive product categories	78	0.54
4170	Refundable deposits for sensitive product categories	20	0.14
8190	Technical regulations n.e.s.	10	0.07
5270	Prior surveillance for sensitive product categories	0	0
7170	Single channel for sensitive product categories	0	0
Total		14,324	100.00

Source: Presentation von Lampe (OECD)

## Methods to quantifying NTMs

The trade and welfare effects of NTMs are a priori unclear, and the NTM impact is thus first and foremost an empirical question. Many factors explain trade patterns between countries, and NTMs have become increasingly important as one influencing factor. At the same time, however, NTMs are used to regulate international trade and it can be argued that the relationship may also apply the other way round. That is, NTMs can also be considered as a

function of trade, and this questions the underlying assumption made in the quantification of NTMs.

Both simulation models and econometric estimation models are applied in the quantitative analysis of the effects of NTMs. Econometric studies usually apply a gravity-type model, which describes bilateral trade flows as a function of a set of explanatory variables, including NTMs. The quantity effect of NTMs on trade is estimated, and, via respective elasticities, the estimation result is subsequently used to calculate the price effect, typically expressed in terms of a tariff equivalent (TE). In contrast, simulation models simulate shocks of changes in regulatory measures, whereby scenarios often refer to the removal of NTMs as trade barriers. The costs and benefits for producers and/or consumers are introduced in the model equations, and the simulation exercises model the producers' and/or consumers' behaviour in response to the changes. As there may be counterbalancing effects, the empirical underpinning of the shocks reflecting NTMs seems to be particularly important and sensitivity analysis should generally be used to look into the robustness of results. For details about the current state of the art in the quantitative analysis of NTMs see, for example, Schlueter and Rau (2009).

The workshop included presentations of quantitative studies that aim to determine the trade effect of NTMs and also wider reaching economic and welfare effects. Table 3 gives an overview of the respective presentations, which are not limited to the effects for African exports to the EU. While Chapter 4 further elaborates on those studies with a focus on Africa and also presents results of the studies, the following paragraphs summarise some key points about the quantification methods.

As mentioned, the gravity approach estimates the quantity effect of NTMs reflected by the coefficient of the explanatory variable for NTMs in the model. The estimation results are used to calculate the price effect in terms of TEs for NTMs, and these TEs can then be used as inputs into simulation models. One main challenge in this estimation approach of course is the explanatory variable for NTMs because the NTMs under review need to be identified and somehow measured. In the papers presented at the workshop, the explanatory variables for NTMs comprise: survey data on the exporters' perception of NTMs, TE estimates, actual requirements and dummy variables (see Table 3). Information on NTMs is not readily available and the measurement is not straightforward. Furthermore, information over time is usually not available, and thus the estimations usually rely on cross-section data. Using panel data, the panel estimation by Nimenya, de Frahan and Ndimira (2009) is an exception in so far as not only the comparative static effects but the dynamic effects of NTMs over time are taken into account.

**Table 3: Overview of the quantitative methods applied in the studies presented at the workshop**

Presentation	Reference to underlying paper	Quantification method	Comments
Marette (UMR Economie Publique INRA-AgroParisTech)	Disdier and Marette (2010)	PE simulation model with gravity estimates to calculate supply and demand side effect of change in MRLs	In gravity model: explanatory variable of MRLs
von Lampe (OECD)	van Tongeren et al. (2010)	PE simulation model, supply side: inspection costs and production changes, demand side: quality effect	Investigates the costs and benefits for different actors in the exporting and importing country
Nicita (UNCTAD)	Kee, Nicita and Olarreaga (2006)	Econometric estimation of gravity type model	Trade restrictiveness index across countries and products, aggregated comparative analysis
Nicita (UNCTAD)	Fugazza and Maur (2008)	Using trade restrictiveness index in GE model GTAP,	Methodological paper investigating different possibilities of reflecting NTMs in GTAP
Nimenya (Université Catholique de Louvain)	Nimenya, de Frahan and Ndimira (2009)	Panel estimation of elasticity of substituting African and EU products, estimates used to calculate TE	NTMs reflected by substitutability between African imports and EU domestic products
Nimenya (Université Catholique de Louvain)	Nimenya (2010)	Estimation of a gravity-type model with interaction terms to separate effect of NTMs imposed by individual EU Member States, panel data	In gravity model: explanatory variables for NTMs – TE estimated by Nimenya de Frahan and Ndimira (2008), dummy to reflect import ban
Gonzalez Mellado (IPTS)	Gonzalez Mellado et al. (2010)	Gravity-type model to estimate NTM effect	In gravity model: explanatory variable for NTMs is index reflecting exporters' perception based on surveys

Source: own compilation based on the workshop presentations

In contrast to gravity estimations, simulation models give results not only concerning the trade impact of NTMs but also about further reaching economic and welfare effects. Partial equilibrium (PE) models allow for a more detailed representation of sectors (and policy measures) than general equilibrium (GE) simulation models and are thus best suited for case studies, which investigate specific NTMs and the issues arising. The papers presented at the workshop illustrate the advantages and challenges in the practical applications.

In simulation models, the TEs derived by gravity-type estimations reflect NTMs and are ultimately introduced as wedges between the price for the domestic and foreign product. In essence, the simulation analysis depicts NTMs just like tariffs and results can thus be expected to be similar to those of a usual analysis of tariffs. However, some corrections for the tariff revenues of the importing country need to be introduced. Being modelled as price wedges, NTMs are presented as border measures that cause costs when the respective

products cross the border. From the point of view of firms that wish to export to foreign markets, some types of NTMs, such as SPS measures however, lead to real trade costs that use resources and thus affect the firms' export supply function. In simulation models, this is captured by supply shifts using so-called iceberg tariffs that melt away a fixed fraction of the export value on the way from the exporting to the importing country, leading to reduced trade and efficiency losses for exporters. In their methodological paper, Fugazza and Maur (2008) compare the results of modelling NTMs as tariffs/price wedges on the one hand and as iceberg tariffs/real trade costs on the other.

While many studies focus on the costs due to NTMs, the benefits need to be considered in a balanced analysis. Benefits accrue to both producers and consumers and may be observed in the exporting and importing country. Amongst the presentations of the workshop, the papers by Disdier and Marette (2010) and van Tongeren et al. (2010) account for the benefits of SPS measures and specifically look into the resulting welfare effects. Both studies use components of the OECD cost-benefit framework for analyzing NTMs developed by van Tongeren, Beghin and Marette (2009) and demonstrate how simulation models can reflect the benefits of NTMs for producers and consumers alike. In quantitative studies, the costs of NTMs are usually estimated in terms of compliance costs and the benefits of NTMs are given by the consumers' willingness to pay. There are several challenges involved with the estimation of the costs and benefits of NTMs, and one prominent issue at hand arises as NTMs differently affect particular groups of producers (e.g. small holders) and consumers (e.g. consumers that face higher health risks than others, such as pregnant women and children).

## **4 Empirical evidence from African countries**

In the workshop a selection of different studies focusing on African countries was presented. Some of the studies analysed common NTMs affecting the whole African continent while other studies concentrated on a specific country and/or product. This chapter first introduces those studies with a cross-country perspective and secondly the specific case studies.

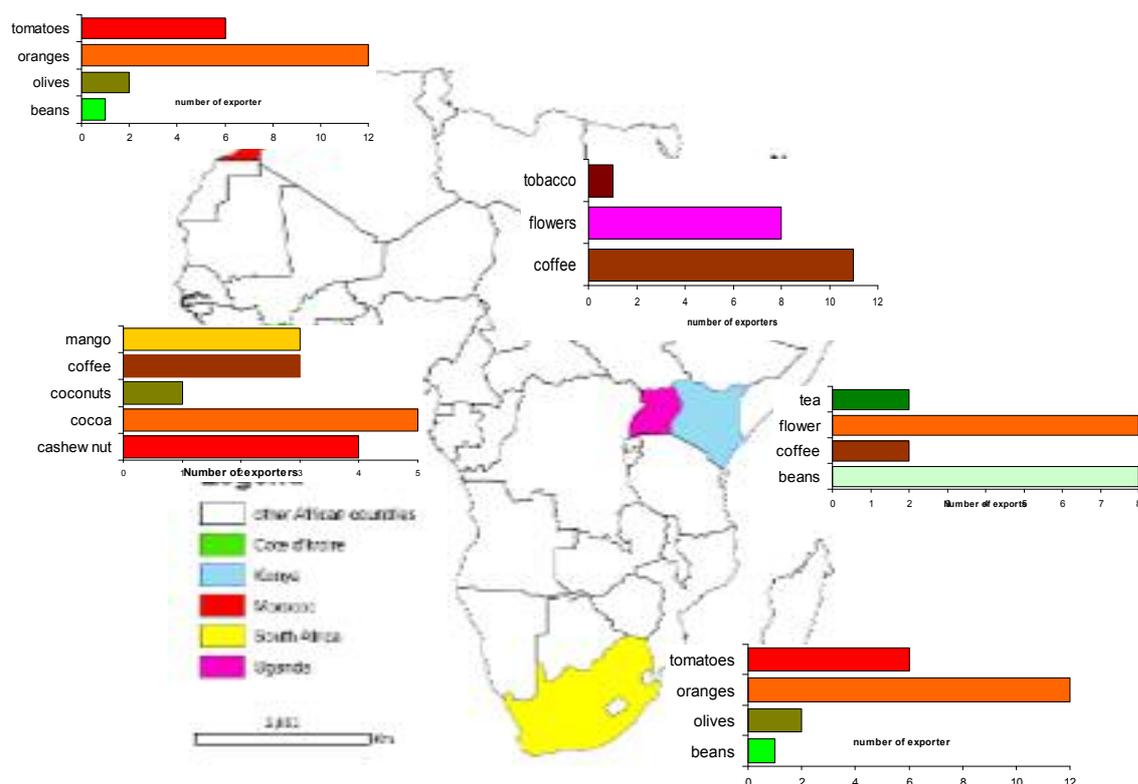
### **Exporters' perceptions**

To facilitate a stronger integration of African countries into the world economy, it is important not only to reduce market access barriers, but also to take into account and address a range of other factors, including those relating to individual competitiveness and the supply

side capacity of each country. Aiming to evaluate the importance of obstacles to EU - Africa agro-food trade and enhancing the EU's knowledge of agricultural trade flows with African partners, the IPTS assessed agro-food trade between the EU and Africa in detail. Alongside the trade analysis, a survey of African agricultural exporters was commissioned in 2008 in five countries: Ivory Coast, Kenya, Morocco, South Africa and Uganda. The countries were selected based on their agricultural trade profile and their relatively high share of agricultural trade being imported into the EU. In total, 95 exporters answered the questionnaires, with 15 exporters participating in Ivory Coast and 20 exporters participating in each of the other countries. The distribution of exporters by country and product is presented in Figure 1.

In the questionnaire five categories of obstacles to trade were created, as described by Gay (IPTS). Each respondent was asked to grade the influence that a list of obstacles to trade had on his/her trade volume. The grading included a positive impact (graded as 1 or 2) and a negative impact (graded as -1 or -2).

**Figure 1: Included countries and products**



Source: Presentation Gay (IPTS).

Some major trends can be spotted regarding the different categories of obstacles to trade, highlighting differences in the exporters' perceptions in different countries.

Concerning the 'taxes and subsidies' category, measures with notable impacts are EU procurement and EU surcharges, EU port taxes and other surcharges. Exporters from Morocco and South Africa have a stronger perception of facing restrictions than exporters from other countries. In these two countries two-thirds of the respondents paid EU port taxes and other surcharges.

In the 'customs and procedures' category, differences in exporters' perceptions across countries are rather low. Exporters perceived as negative the impact of rules of origin, especially in South Africa where a quarter of the exporters have experienced problems. However, South African exporters perceive pre-shipment inspections positively.

In the 'standards and regulations' category, no trends across countries can be tracked. In general, exporters from Ivory Coast have a more positive perception, whereas those from South Africa a more negative. For most of the exporters participating in the survey SPS measures were highlighted as having important impacts on trade flows. A clear negative perception was found among South African exporters regarding shipments barred from entering the EU given that 60 per cent of the respondents reported a barred shipment. In Morocco and South Africa more than 80 per cent of the exporters made specific investments in recent years to acquire certifications for food and agricultural products. A positive perception of compliance with EU standards enhancing exports to the EU was indicated by approximately 50 per cent of Kenyan, Moroccan and Ugandan exporters. Finally, transport and transportation costs are seen as a major obstacle by all exporters.

The exporter survey is currently being used to analyse the effects of the export structures, product characteristics and country profile linked to the exporters' perceptions (presentation Gonzalez-Mellado, IPTS). The ongoing results compare the impact of African export characteristics with exporter's perceptions. It shows that perceptions are closely linked to the exporting country given that policy implementation is a country-specific issue. In addition perceptions are linked to product characteristics and to the price used for the transactions: cost, insurance and freight (CIF) versus free on board (FOB) price as some countries support export insurances. The investigation into exporters' perceptions of obstacles to trade will continue to study other obstacles to trade included in the survey.

## **Impacts of NTMs on EU horticultural and fish EU imports from Africa**

In the framework of another cross-country research project to measure the trade impact on EU horticultural and fish imports from African countries, tariff equivalents for diverse NTMs have been estimated and used to measure the possible effect of NTMs on the EU imports.

To estimate the tariff equivalents of NTMs, an extension of the price-wedge method has been used to take into account imperfect substitution and factor endowment in monopolistic competition. This study provides ad valorem tariff equivalents of several international food safety standards for imports of fruit, vegetables and fish from Kenya and Tanzania. The data have been analysed with panel data of European imports from Kenya, Uganda, Tanzania and Zambia. Empirical results show that the tariff equivalent is about 36 per cent for avocados, ranges from 40 to 92 per cent for fresh peas and green beans and goes from 12 to 190 per cent for frozen fish fillets. Regarding importing countries, the findings of this study show a strong preference of more than 99 per cent for domestic frozen fish fillets and an important variation of the tariff equivalent for all the products among the EU importing countries and over time. The tariff equivalents obtained are used in a gravity econometric estimation to quantify the trade effect of these NTMs on imports. The approach takes into account the effects of NTMs as a component of trade costs using the gravity specification of Anderson and van Wincoop (2004). Results show that non-tariff measures do not have an impact on the trade in green beans while they impede the trade in frozen fish fillets. This study constitutes additional empirical evidence that unitary elasticities of output and expenditure on consumption are not appropriate (presentation Nimenya, Université Catholique de Louvain). Finally, using a probit bivariate estimation on survey data from Kenyan small-scale providers, Nimenya shows that the decision to supply certified products strongly depends on credit access.

## **Case of Seafood EU Imports**

The workshop was focused on African imports into the EU. However in order to assess a new methodology, one paper on EU imports from African and non-African countries was included. The presentation by Marette (INRA) focused on EU seafood imports, including the impact of NTMs on welfare in the analysis. The empirical application focused on the effects of a standard capping of antibiotic residues in crustaceans in the US, the EU, Canada and Japan. In the seafood industry the antibiotic chloramphenicol is used to protect animals from diseases but is found to have toxic effects for human health. While the econometric estimation of the gravity equation reported a negative impact on imports, welfare evaluations showed that, in most cases, a stricter standard would lead to an increase in both domestic and

international welfare. Thus, negative developments of trade may be more than outweighed by the positive impact on consumer welfare.

The main questions raised in the workshop concerned welfare calculation. One asked whether consumers are willing to pay for safer food or if costs will be internalised by consumers so that they are not aware of the increase in food safety due to the implementation of the NTM. Additionally, changes in welfare across countries are also not considered.

### **Case of Moroccan Agricultural Exports**

El-Otmani's (University Hassan II) presentation showed the specific NTMs faced by Moroccan agricultural exporters to the EU. As several presenters remarked, most of the problems faced are related to SPS measures. Some of the SPS faced are shipping sanitary measures, including the control of diseases, agrochemicals and other additives. The SPS measures set MRL of these additives to be used while exporting. The complexity of these obstacles to trade becomes evident when acknowledging that MRL differ across countries and change from year to year. Other technical problems such as detection methods of the minimum level for these chemical substances are faced by exporters. Additionally, exporters have to prove that the products fulfil the MRL specifications. Thus, MRL data should be obtained from certified laboratories, which is costly.

It is not only SPS criteria that have to be met, products also have to meet quality standards beyond countries' public standards related to shape, colour, surface characteristics, and product texture such as firmness and freshness. In addition, the name of the packing house should be mentioned on the pallets for immediate recognition of the origin of the product, packages must carry information enabling importers to trace products from production sites to export spots. Furthermore, packages must carry information on any post-harvest treatments applied to products (such as fungicide, wax type, etc) and labelling of individual fruits may be required by retailers.

### **NTMs on EU tomato imports from Morocco**

One example of NTMs affecting a specific product was provided by Aloui (AgroConcept) with the case study of Moroccan tomatoes. Morocco is the most important supplier of tomatoes to the EU and benefits from a lower entry price.

Preferential access is granted only under a tariff rate quota (TRQ). This mechanism results in an economic rent for Moroccan exporters because the marginal cost of supplying the imported good is below the retail price on the EU market. In addition more and more tomatoes can be

exported outside the quota given that the most favoured nation entry price has been fixed in nominal terms and at certain periods of the year exporters may be able to pay the full (low) tariff and spare quota quantities for periods with higher market prices.

While there are NTMs negatively affecting trade, as detailed in the previous chapter, the compliance with certain private standards (GlobalGAP, British Retail Council (BRC), Nature Choice) can bring considerable benefits to producers, such as reduced agrochemical use and a framework that guides agricultural and management practices. An empirical comparison by the author between the compliance costs observed in 2004 and in 2010 shows that unit costs of compliance decrease over time, probably due to economies of scale.

The decomposition of production costs is presented in Table 4. According to producers and packing houses, fixed costs account for approximately 90 per cent of total costs. Most of this share is mainly related to personnel hired to execute internal audits which are required for traceability processes.

However, in this process only competitive exporters have managed to create the infrastructure necessary to comply with requirements. Conforming to high standards for one retailer opens up new markets. In this sense, standards may drive improvements in competitiveness and develop innovation.

**Table 4: Cost decomposition for tomato production in Morocco**

	<b>Total Costs per year (1000 Euro)</b>	<b>Total Costs (Euro/ton)</b>
Sunk costs	20	0.5
Overhead costs	200	5
<b>Total fixed costs</b>	<b>220</b>	<b>5.5</b>
Variable costs	28	0.7
<b>Total cost of compliance</b>	<b>248</b>	<b>6.2</b>
		<b>% border prices</b>
Cherry tomatoes		0.8%
Round tomatoes		1.55%

Source: Presentation Aloui (AgroConcept)

## **Case of Tunisian Agricultural Exports**

With the collaboration of Ms Myriam Khefifi Ben Mohamed, a Tunisian exporter of olives, a presentation on the point of view of Tunisian exporters was prepared (presentation van Doorslaer, IPTS)<sup>11</sup>. The main problems are the cost and complexity of complying with the certification and traceability requirements of public and private institutions. Some producers are not prepared or willing to change their production system to comply. Thus, the number of producers able to provide raw material to exporters is decreasing and prices increase. The lack of qualified laboratories to analyse SPS requirements, pH level, texture and colour limits the exporters' ability to guarantee their deliveries to the European market. The main effects of these NTMs are the rising price of direct and indirect costs in production and exports from Tunisia, and small size firms disappear to the benefit of larger enterprises. Due to NTMs set on the EU market, some olive companies re-orientate their exports to other African countries, where standards are not so restrictive and expensive.

## **5 Policy issues in the NTM context**

The presentations and discussions at the workshop revealed numerous challenges facing the research agenda on NTMs. Policy challenges, however, are no less numerous, starting with the need to formulate regulations that address societal concerns (such as environment or food safety) and do not create unnecessary obstacles to trade or serve as a means of discrimination or disguised restriction on international trade. In addition, some measures can be welfare-enhancing, delivering information to producers, consumers, etc. as consumers are becoming more demanding and aware of conditions of production. This section focuses on the main policy themes emerging from the workshop.

Importance of tariff and non-tariff measures: Trade literature is ripe with statements on NTMs taking the place of tariffs in hampering the trans-border movement of goods. Although tariff protection is decreasing and NTMs appear to be gaining importance, both tariff and non-tariff measures are still important and deserve further negotiation. To prepare for bilateral agreement negotiations, it would be necessary to assess the importance of NTMs to measure

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<sup>11</sup> As Ms Myriam Khefifi Ben Mohamed could not attend the workshop to share her experiences as a Tunisian exporter, she provided IPTS staff with a document describing her experience. Based on this document, Mr. van Doorslaer prepared his presentation.

whether potential gains of a further liberalisation could not be considerably undermined by NTMs. However conclusions that NTMs replaced tariff protection are premature.

Occurrence and sector specificity of NTMs: Not all NTMs in all sectors affect trade equally. Contrary to what one could expect, there are often less complaints from exporters about the sectors with the highest number of regulations. A typical example is the fish sector: although fish, as a highly perishable product, is subject to a number of hygienic regulations, relatively few complaints are heard compared to other, less regulated sectors.

Private standards remain a contentious issue: Although many developing countries regularly bring complaints regarding private standards for discussion by the WTO SPS Committee, precise coverage of private standards in international agreements remains to be finalised. Some argue that as a form of business-to-business standards private standards do not fall under the auspices of the WTO.

Strengthening dispute settlement procedures both on multilateral and bilateral levels: Although currently very few complaints relating to NTMs are presented in the WTO dispute settlement by developing countries, a lack of formal complaints in the WTO does not mean that there are no problems. Many developing countries view a dispute settlement process as costly and fear that trade would stop while the dispute is ongoing. EPAs, discussed later in the text, contain a simplified dispute settlement process. In addition, despite slow progress on the Doha Development Round, further trade liberalisation should take an active approach towards NTMs on both multilateral and bilateral levels.

The Economic Partnership Agreements (EPAs) between the EU and ACP countries aim to promote trade through trade development, sustainable growth and poverty reduction. NTMs, such as export taxes, SPS, and rules of origin are often raised in EPA negotiations. A full EPA in the framework of ACP has only been signed with Caribbean countries. To date (2010\_ Interim EPAs have only been signed with the Pacific region and some African regions (– West Africa, Eastern and Southern Africa (ESA), East African Community (EAC), South African Development Community (SADC) and Central Africa).

Capacity building remains of utmost importance: Training and technical support is one of the EPA's objectives. Food safety standards appear to be the main constraints in terms of market access for ACP countries. Rather than establishing regulations perceived by developing countries as trade barriers, a preferred option is to improve production processes and build up production and institutional capacity. Production segmentation, e.g. supplying more than one market with products satisfying different standards, might not always be a feasible alternative due to the risk of contamination. On the other hand, production to the strictest standard might

not be feasible due to a lack of capacity. In addition, capacity development is also necessary in the area of technical assistance, specialized consultancy, service to repair machinery, support to achieve certification, and training and education of personnel (presentation Doherty).

Infrastructure support and development: Infrastructure support is addressed via general development policies as transport and infrastructure impact competitiveness. Lack of suitable infrastructure contributes to a higher cost of compliance with importing country regulations and increases the cost of doing business. On the other hand, economies of scale play a role. For example, it is not necessary for each country to have access to its own testing and accreditation laboratory as these facilities can be efficiently shared regionally.

Importance of domestic policies: As scale economies reduce the cost of compliance, larger firms face lower average costs to satisfy some NTMs, which can result in the liquidation of small and medium enterprises. Policies easing transformation to other economic sectors, such as vocational training etc., should be in place.

South – South trade: there is some evidence of strengthening South – South trade flows, pointing to the need for more South – South analysis. Some countries complain that South – South trade with neighbours can be limited because of political problems and, at times, lack of suitable transportation and infrastructure links. For intra-regional trade, harmonised standards are also needed which, in the interest of keeping other export markets open, are best harmonised according to international reference levels.

Information and experience sharing using various dialogues and other forums: coherent forums designed to facilitate information and experience sharing to discuss various issues, including NTMs, trade facilitation, development aid and Aid for Trade in agriculture, should be put in place. These should incorporate enhanced cooperation among EU, African Union, World Bank, UNCTAD and UNIDO and make progress on as yet unsettled governance issues.

Transparency with regards to import conditions remains key. The introduction of the EU Export Helpdesk to facilitate trade from developing countries into the EU was welcomed as a useful tool for providing relevant information and contributing to transparency. The EU provides support and another helpdesk for exports through an Import (Export) Management Framework for Trade, which includes certain requirements (standards) that products should comply with in order to be imported into the EU or exported from the EU to particular destinations. These standards are based on product definition and quality standards that products should fulfil.

New areas of NTMs create and will continue to create additional policy challenges: environmental-related measures (green growth), and fish and forestry (so-called resources-trade) remain somewhat uncharted territory in trade policy.

## **6 Conclusions**

The workshop brought together experts from different disciplines (research, policy and business) and their discussion, particularly on the definition of NTMs, highlighted the complexity and broadness of the topic. There is a commonly accepted NTM definition, but there is not always a consensus on whether certain measures should be classified as NTMs or not. For example certain quality requirements established by private companies are considered by some as belonging to the business-to-business relationship while others see them as clear NTMs.

Africa represents only a very small share of the world trade value. More than half of African exports are in oil and mineral fuels. The share of Africa in the world trade of agricultural products is slightly higher; however the exports are mainly concentrated to a limited number of commodities.

Even though tariff protection is progressively decreasing in LDCs and in the framework of bilateral agreements, tariffs remain important especially in Mediterranean countries. At the same time, NTMs appear to be gaining attention. NTMs have been detected for almost all agro-food products worldwide. The majority of these NTMs aim to protect health (human, plant and animal health). In addition to the positive effects on health, the compliance with certain measures may enhance trade given that they establish trust between trade partners. The term NTM covers many measures. However, most of the workshop concentrated on the major ones for agricultural products: SPS and TBT measures. Moroccan participants stressed in particular the importance of the cost of complying with these requirements, notably in terms of certification. It was underlined that in Africa the lack of infrastructure, e.g. the lack of certified laboratories, makes it more difficult and costly for exporters to comply with these measures and remain competitive at the same time. NTMs affect welfare in both exporting and importing countries. This change in welfare may be positive or negative depending on the NTM considered as well as on the time frame.

Concerning the analysis of NTMs, the workshop underlined the difficulty of collecting data. Surveys are commonly used to gather information. However the workshop commented on the

limitations of these surveys (and perception analyses) in particular in terms of their representativeness and comparability across countries. Participants of the workshop recognised the need for better communication and more systematic approaches to improve their design and make them of use to a maximum of researchers. UNCTAD is pursuing its efforts to build a public database including as many NTMs as possible and covering a maximum number of countries. Given the complexity and the cost of this exercise they concentrate only on public requirements. The data availability leads researchers to a difficult choice: either limiting their analysis to very specific products and NTMs so as to rely on good data or analysing broader NTM effects but therefore lacking some specific information.

Concerning the modelling of NTMs' impacts, the current econometric methods or equilibrium models used do not take into account the dynamic effects of NTMs. Furthermore, the potential benefits of some of these measures are often missing in the analyses due to the complexity of quantifying them. Therefore, the workshop concluded that there is currently a need to develop new methodologies to effectively assess the impact of NTMs. Further efforts are needed to better identify the actual positive and negative effects of NTMs. New methods are necessary to measure these effects so that results can be commonly accepted by the research community as well as by policy makers. The benefits and costs of NTMs would also allow for the identification of welfare gains or losses in the economy and society in the short and long term.

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van Tongeren, F., Disdier, A.-C., Komorowska, J., Marette, S. and M. von Lampe, 2010, Case Studies of Costs and Benefits of Non-Tariff Measures: Cheese, Shrimp and Flowers, OECD Food, Agriculture and Fisheries Working Papers 28, OECD, Paris.

van Tongeren, F., Beghin, J. and S. Marette, 2009, A Cost-Benefit Framework for the Assessment of Non-Tariff Measures in Agro-Food Trade, OECD Food, Agriculture and Fisheries Working Papers 21, OECD, Paris.

## **Annex 1: Workshop Agenda "Non Tariff Measures (NTM) affecting agro-food trade between the EU and Africa"**

**9-10 September 2010**

### **Venue:**

Institute for Prospective Technological Studies (IPTS),  
Calle Inca Garcilaso 3, ES-41092 Seville, Spain

Organisers: Institute for Prospective Technological Studies  
Aída Gonzalez Mellado, Sophie H elaine, Robert M'barek

### **AGENDA (9 SEPTEMBER 2010)**

<b>9:15 - 9:45</b>	<b>Welcome to the workshop and opening remarks.</b>	John Bensted-Smith
<b>9:45 - 11:00</b>	<b>Session 1: trade flows and NTMs</b>	Chair: Jose Maria Garcia Alvarez Coque
(25 min)	Agricultural trade between Africa, MED and the EU	Robert M'barek and Sophie H�elaine
(20 min)	NTM definitions and generalities	Andreas Schmidt
(30 min)	Discussion	All participants
<b>11:00 - 11:30</b>	<b>Coffee break: EXPO Patio</b>	
<b>11:30 - 13:30</b>	<b>Session 2: Detection of NTMs in trade</b>	Chair: Monika Tothova
(30 min)	OECD work on NTMs in Agriculture: Data and other issues	Martin von Lampe
(20 min)	National NTM data	Alessandro Nicita
(30 min)	Focus on EU SPS measures and the analysis of their impact	Marie Luise Rau
(40 min)	Discussion	All participants
<b>13:30 - 14:30</b>	<b>Lunch break: EXPO Patio</b>	
<b>14:30 - 16:00</b>	<b>Session 3: Exporters views and SPS measures</b>	Chair: Martin von Lampe
(20 min)	African Agricultural and Food Exports to the EU: Obstacles to trade	Hubertus Gay
(10 min)	Introduction on Exporters' view	Leonard Mizzi
(10 min)	The exporters' point of view - Tunisia	Benjamin van Doorslaer
(25 min)	Improving market access to the EU: measures to overcome SPS and related Non-Tariff Barriers	Martin Doherty
(25 min)	Discussion	All participants

<b>16:00 - 16:30</b>	<b>Coffee break</b>	
<b>16:30 – 17:30</b>	<b>Session 3: Exporters views and technical quality standards, norms and SPS measures</b>	Chair: Martin von Lampe
(20 min)	Technical Quality Standards, Norms, and SPS Measures Affecting Market Access of Mediterranean and ACP Products: the Case of Morocco	Mohamed El-Otmani
(20 min)	A tariff equivalent of non-tariff measures on European horticultural and fish imports from African countries	Nicodème Nimenya
(20 min)	Discussion	All participants
<b>20:30</b>	<b>Dinner: Restaurante Manolo León Calle Guadalquivir 8</b>	
<b>AGENDA (10 SEPTEMBER 2010)</b>		
<b>9:00- 10:30</b>	<b>Session 4: Measurement of the costs due to NTM</b>	Chair: Michel Petit
(30 min)	The Combination of Gravity and Welfare Approaches for Evaluating Non-Tariff Measures	Stephan Marette
(30 min)	The Cost of Compliance with SPS Standards for Moroccan Exports: A Case Study	Omar Aloui
(30min)	Discussion	All participants
<b>10:30 – 11:00</b>	<b>Coffee break: EXPO Patio</b>	
<b>11:00-13:00</b>	<b>Session 5: Modelling impacts of NTM</b>	Chair: Stephan Marette
(20 min)	Estimating Trade Restrictiveness Indices	Alessandro Nicita
(20 min)	Non-Tariff Measures/Barriers in CGE Models	Alessandro Nicita
(20 min)	Trade effect of non-tariff measures on European horticultural and fish imports from African countries	Nicodème Nimenya
(20 min)	Obstacles to agricultural trade between Africa-EU which are the main determinants for the exporters?	Aída Gonzalez Mellado
(40 min)	Discussion	All participants
<b>13:00-13:30</b>	<b>Concluding remarks</b>	Robert M'barek All participants
<b>13:30</b>	<b>Lunch: EXPO Patio</b>	

## Annex 2: List of Participants

	<b>Family name</b>	<b>Surname</b>	<b>Institution</b>
1.	Aloui	Omar	Agro Concept
2.	Bensted-Smith	John	European Commission, JRC.IPTS
3.	Breul-Busson	Sophie	European Commission, DG DEV B2:Sustainable management of natural resources
4.	Colen	Liesbeth	LICOS, University of Leuven
5.	Delince	Jacques	European Commission, JRC.IPTS
6.	Doherty	Martin	Cerrex Ltd.
7.	El-Otmani	Mohamed	Department of Horticulture, Institut Agronomique et Vétérinaire Hassan II
8.	Garcia-Alvarez-Coque	Jose-Maria	Universidad Politécnica de Valencia Department of Economics and Social Sciences
9.	Gay	Hubertus	European Commission, JRC.IPTS
10.	Goncalves	Nuno	SPA: Sociedade Portuguesa de Inovação
11.	Gonzalez Mellado	Aída	European Commission, JRC.IPTS
12.	Hélaine	Sophie	European Commission, JRC.IPTS
13.	Marette	Stephan	UMR Économie publique AgroParisTech and INRA
14.	M'Barek	Robert	European Commission, JRC.IPTS
15.	Mizzi	Leonard	European Commission, DG AGRI A3: ACP and South Africa, FAO, G8
16.	Petit	Michel	Institut Agronomique Méditerranéen de Montpellier (IAMM)
17.	Nicita	Alessandro	UNCTAD, Division on International Trade,
18.	Nimenya	Nicodeme	Université Catholique de Louvain la Neuve
19.	Rau	Marie-Luise	Institute of Agricultural Economics (LEI), part of Wageningen University, The Hague
20.	Schmidt	Andreas	European Commission, DG TRADE: F3 Food-related Sectors
21.	Tothova	Monika	European Commission, DG AGRI L5: Agricultural trade policy analysis
22.	Van Doorslaer	Benjamin	European Commission, JRC.IPTS
23.	Von Lampe	Martin	OECD Directorate for Trade and Agriculture

### **Annex 3: Workshop Presentations**

## Welcome to the workshop and opening Remarks John Bensted-Smith (JRC-IPTS)

**JRC** **ipts**

**Workshop on Non Tariff Measures (NTM) affecting agro-food trade between the EU and Africa**  
Seville, 9-10 September 2010

John Bensted-Smith  
Director

European Commission, Joint Research Centre,  
Institute for Prospective Technological Studies (IPTS), Seville, Spain

**JRC** **ipts**

**JRC ACP observatory for Sustainable Development**

- Provides scientific information, diagnostics and scenario building to the service of development policies (EC, Member States, beneficiary countries and regions, donor's community)
- For information sharing, increased co-operation and co-ordination of response strategies
- by JRC-IPSC, Global Environment Unit, IPTS (jrcobservatory@ec.europa.eu)

**JRC** **ipts**

**Structure of the JRC**

7 institutes on 5 sites - 2700 staff - 240 M€y direct from FP7 + 60 M€ earned income

- E - France, Du Bouchet**  
Institute for Energy  
Director: Gilles-Marie Verdier
- IRI - Dord, Delft**  
Institute for Information and Remote Sensing  
Director: Christophe Herberichs
- EU - Karlsruhe, Germany**  
Institute for Transnational Governance  
Director: Thomas Pfingstl
- IE - Luxembourg, Luxembourg**  
Institute for Environment and Sustainability  
Director: Leon Meijer
- IRI - Seville, Spain**  
Institute for the Production and Security of the Cities  
Director: Stephen Laidlaw
- IPTS - Seville, Spain**  
Institute for Prospective Technological Studies  
Director: John Bensted-Smith

**IPTS - 200 staff - 18 M€y direct from FP7 + 8 M€ earned income**

**JRC** **ipts**

**JRC Crop Monitoring and European Media Monitor**

- Global Monitoring for food security (GMFS) provides early warning, agricultural mapping and crop yield assessment services in support of food security monitoring activities in Africa. JRC-IPSC is providing the crop forecast modeling (http://ec.europa.eu/jrc/foodsec/).
- European Media Monitor, daily news analysis across languages and over time (news extracted) by JRC-IPSC, Global Security and Crisis Management unit (http://ec.europa.eu/jrc/mediamonitor/).

**JRC** **ipts**

**EC Joint Research Centre, IPTS**

- The JRC is a Directorate-General of the European Commission
- Provides customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies
- 'Customers' are predominantly other Commission services
- "The JRC's vision is to be a trusted provider of science-based policy options to EU policy makers to address key challenges facing our society, underpinned by internationally recognized research." (JRC Strategy 2010-2020)
- Core policy areas of Institute for Prospective Technological Studies:
  - knowledge for growth
  - information society
  - sustainable production and consumption
  - climate change, energy and transport
  - agriculture and rural development

**JRC** **ipts**

**JRC Enlargement and Integration Action 2010**

- Workshops and Training Courses on Advanced Methods and Techniques
- Partnership agreements with EU's immediate neighbours by land or sea (European Neighbourhood Policy)
- more information contact: [jrcenlargement@ec.europa.eu](mailto:jrcenlargement@ec.europa.eu)

Area	Workshop Title	Link to Workshop Description
2010 Dates	Workshop on Advanced Methods and Techniques	1-6 Oct
	Workshop on Advanced Methods and Techniques	7-10 Oct
Partnership, Trade, Cooperation and Migration	Workshop on Advanced Methods and Techniques	18-20 Oct
	Workshop on Advanced Methods and Techniques	21-23 Oct
Enlargement, Trade or Sea	Workshop on Advanced Methods and Techniques	24-26 Oct
	Workshop on Advanced Methods and Techniques	27-29 Oct

### JRC Background of workshop

*It is a sad but undeniable fact that ACP countries' share of EU imports has already shrunk over the past decades – despite the EU giving them more open access than many other developing countries – and still concentrates on only a handful of commodities. We have to reverse this trend.*

From: De Gucht, European Commissioner for Trade, "EU Trade Policy Towards Developing Countries" Conference, Brussels, 18 March 2010. \* from 7 to 25 to 50 years

**Why this workshop?**

- More access = More trade?
- How to analyse NTMs? Exchanging views and ideas
- IPTS modelling tools are used for agricultural trade analysis, need to understand impact of NTM
- IPTS Study on NTM EU-Africa
- Specific interest of JRC to cooperate on different topics with African countries
- Continuation of activities in past (e.g. Eurofiled workshop 2009)
- FP7 project NTM-Impact (<http://www.iptis-impact.eu/>)



### JRC Tour de table

Abou Ous	Director General of Agro-Concept	Soroko, Caroline	IFP
Colinny, Marie	Carrefour Africa	Calu, Nilsa	University of Bologna
Di-Dinan, Mohamed	Institut Agronomique et Veterinaire Hassan II	Craxi, Lorenzini	EURO
Elia, Aurora-Cristina	U. Politecnica de Valencia	Burell, Alison	Frederick mander
Gonzalez, Rocio	Sociedade Portuguesa de Inovação	Ilari, Leonel	EC, DG AGRI AG
Kheif, Ibrahim, Myken	ITE OUAL	Tullow, Shelia	EC, DG AGRI AG
Maurit, Ghyslain	Agriculture and BSA	Ukeshaw, Isabella	EC, DG AGRI AG
Nico, Alessandro	UNCTAD	Urbaniak, Sophie	EC, DG AGRI AG
Ninyes, Yolanda	U. Católica de Lovaina - Brno	Schmidt, Andrea	EC, DG TRADE
Petit, Vincent	L'Agron. Méd. de Montpellier	Bernard-Denis, John	EC, JRC-IPTS
Roa, Nerea-Luisa	ISI	Delisle, Jacques	EC, JRC-IPTS
van Lemp, Martin	OECD	Clay, Helen	EC, JRC-IPTS
		Guerrero-Indaco, Ana	EC, JRC-IPTS
		Holme, Sophie	EC, JRC-IPTS
		Wiback, Robert	EC, JRC-IPTS

### JRC Objectives

- To shed light on African-MED European trade relations in agro-food products
- To analyse NTM in certain products from African partner countries
- To identify future research needs on NTM existing in trade between the EU, Mediterranean and ACP trading partners and to identify ways of extending IMAP models to introduce NTM impacts
- To promote discussion with experts from academia, policy and business

### JRC Thank you for your interest !



For more information on the JRC-IPTS, please visit:  
<http://ipts.jrc.ec.europa.eu>

### JRC Agenda (9 September 2010)

09:00-10:00	Session 1: Welcome and NTMs	Chair: Marie-Claire Mignot-Dreyer
10:00-10:30	10:00-10:30: Welcome to Africa by Caroline Calu (EU)	
10:30-11:00	10:30-11:00: Welcome to Europe by Myken Ninyes (EU)	
11:00-11:30	11:00-11:30: Welcome to Africa by Myken Ninyes (EU)	
11:30-12:00	11:30-12:00: Welcome to Europe by Myken Ninyes (EU)	
12:00-12:30	12:00-12:30: Welcome to Africa by Myken Ninyes (EU)	
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45:30-46:00	45:30-46:00: Welcome to Europe by Myken Ninyes (EU)	
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51:30-52:00	51:30-52:00: Welcome to Europe by Myken Ninyes (EU)	
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55:30-56:00	55:30-56:00: Welcome to Europe by Myken Ninyes (EU)	
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57:00-57:30	57:00-57:30: Welcome to Africa by Myken Ninyes (EU)	
57:30-58:00	57:30-58:00: Welcome to Europe by Myken Ninyes (EU)	
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59:00-59:30	59:00-59:30: Welcome to Africa by Myken Ninyes (EU)	
59:30-60:00	59:30-60:00: Welcome to Europe by Myken Ninyes (EU)	

### JRC Agenda (10 September 2010)

09:00-10:00	Session 1: Introduction of the workshop	Chair: Myken Ninyes
10:00-10:30	10:00-10:30: Welcome to Africa by Myken Ninyes (EU)	
10:30-11:00	10:30-11:00: Welcome to Europe by Myken Ninyes (EU)	
11:00-11:30	11:00-11:30: Welcome to Africa by Myken Ninyes (EU)	
11:30-12:00	11:30-12:00: Welcome to Europe by Myken Ninyes (EU)	
12:00-12:30	12:00-12:30: Welcome to Africa by Myken Ninyes (EU)	
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13:00-13:30	13:00-13:30: Welcome to Africa by Myken Ninyes (EU)	
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17:00-17:30	17:00-17:30: Welcome to Africa by Myken Ninyes (EU)	
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19:00-19:30	19:00-19:30: Welcome to Africa by Myken Ninyes (EU)	
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20:00-20:30	20:00-20:30: Welcome to Africa by Myken Ninyes (EU)	
20:30-21:00	20:30-21:00: Welcome to Europe by Myken Ninyes (EU)	
21:00-21:30	21:00-21:30: Welcome to Africa by Myken Ninyes (EU)	
21:30-22:00	21:30-22:00: Welcome to Europe by Myken Ninyes (EU)	
22:00-22:30	22:00-22:30: Welcome to Africa by Myken Ninyes (EU)	
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23:00-23:30	23:00-23:30: Welcome to Africa by Myken Ninyes (EU)	
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26:00-26:30	26:00-26:30: Welcome to Africa by Myken Ninyes (EU)	
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27:00-27:30	27:00-27:30: Welcome to Africa by Myken Ninyes (EU)	
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## Agricultural trade between Africa, MED and the EU

Robert M'barek and Sophie H elaine (JRC-IPTS)

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NTM affecting agro-food trade between the EU and Africa  
Seville, 9-10 September 2010

### Agricultural trade between Africa, MED and the EU

Robert M'barek and Sophie H elaine

European Commission, Joint Research Centre,  
Institute for Prospective Technological Studies (IPTS), Seville, Spain

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### Trade agreements with the ACP Countries

**Economic Partnership Agreements objectives**

- Promoting trade
- Their smooth and gradual integration into the global economy and eradication of poverty
- Increase the production and supply capacity of the ACP countries
- Foster the structural transformation of the ACP economies and their diversification
- Support regional integration

→ Trade chapter = duty and quota-free EU market access

In addition: Everything But Arms in LDC's since 2001

- 90% of the region "East" exports can enter the EU duty-free already

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### Outline

- Bilateral trade agreements
  - With South Africa
  - With ACP
  - With MED
- Trade development
  - Africa in the world trade
  - Trade between Africa/MED and the EU27
  - Regional specificities
- Conclusions

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### 4 ACP-EPA regions in Africa



**WEST - 16 countries**  
Only 1 interim EPA signed in Ivory Coast in 2005, others pending

**EAST - 16 countries**  
EPA signed in 2000 for Mauritius, Seychelles, Zimbabwe and Madagascar, interim EPA for the other countries (Zambia and Comoros pending)

**CENTRAL - 8 countries**  
Only 1 EPA signed in Cameroon in 2009

**SOUTH - 7 countries**  
EPA signed in 2009 for Botswana, Lesotho, Swaziland and Mozambique, interim EPA for the other countries and Namibia pending.

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### Bilateral trade agreements

- A specific agreement with South Africa
  - Entry into force: 2000 (provisional), 2004 (fully)
  - Progressive tariff reduction
  - Aim = liberalisation of 96% of the EU's imports from SA within 10 years, and 86% of SA's imports from the EU in 12 years
- With ACP
  - Historically: Yaound  Convention (1964) - 4 Lom  conventions (non-reciprocal trade preferences)
  - Cotonou agreement signed in 2000 and revised in 2005
  - **Economic Partnership Agreements (EPA)**

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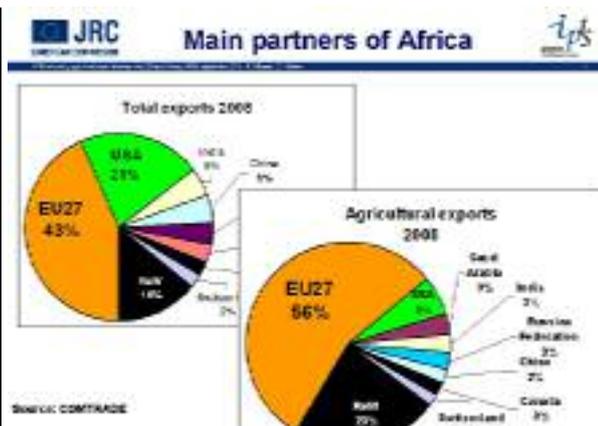
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### Trade agreements with the MED Countries

- 1995 "Barcelona declaration"
- 2004 European Neighbourhood Policy
- 2008 creation of the "Union for the Mediterranean"
- 2009 Euro-Mediterranean Trade Roadmap beyond 2010

→ key objective: creation of a deep Euro-Mediterranean Free Trade Area via Euro-Mediterranean Association Agreements

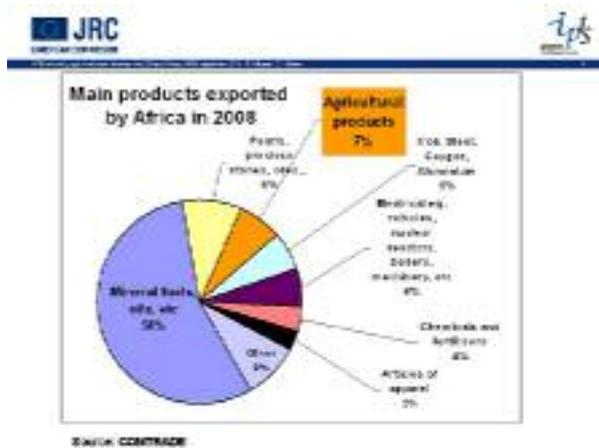
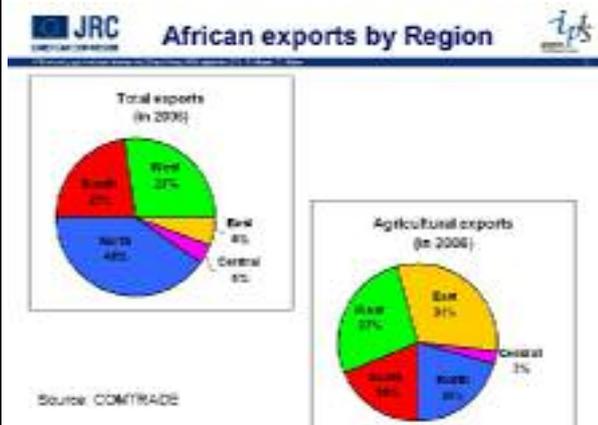
→ Main elements = TRQ, Entry prices [, Tariff concessions



### JRC Africa in the world trade

- Africa = \$B 343 imports in 2008 = \$B 317 exports in 2008 (i.e. 2% of the world trade only)
- A trade dominated by oil and mineral fuels in most of the regions (56% of 2008 African exports)
- Agricultural products = 7% of African exports (2008)
- Agricultural intra-trade limited = 24% of total trade (2008)

\*Source: COMTRADE, trade intra-Africa & intra-MED excluded, MS nomenclature and the agricultural products defined according to the WTO classification. No data for South Africa before 2000 and no data for Cameroon from 2007



### JRC Regional exports to RoW

**MED:**

- Oil = 43%
- AGR = 5%
- EU27 = 44% of AGRi eX
- Other partner = Iraq

**WEST:**

- Oil = 80%
- AGR = 7%
- EU27 = 60% of AGRi eX
- Other partner = Malaysia

**SOUTH:**

- Precious stones = 31%
- Oil = 9%
- AGR = 7%
- EU27 = 43% of AGRi eX
- Other partner = Japan

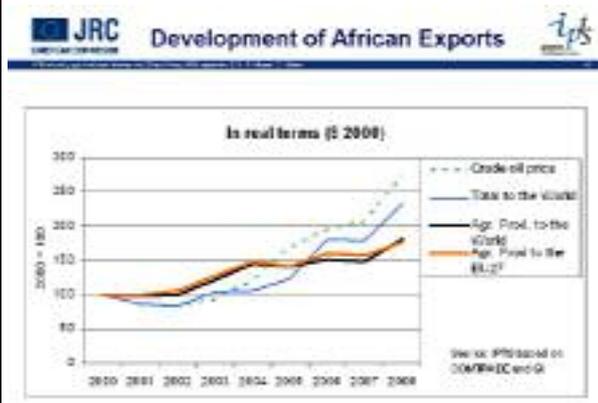
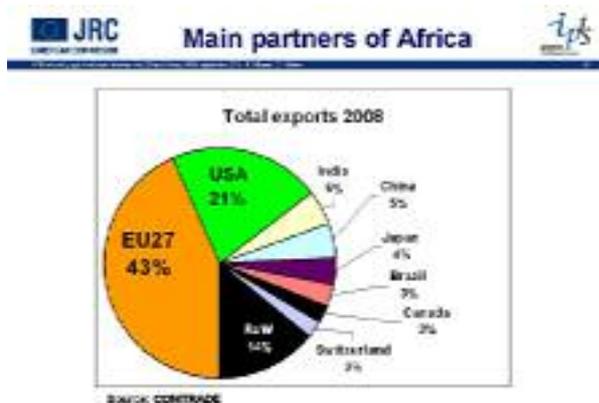
**EAST:**

- AGR = 35%
- Iron, steel, copper, al. = 17%
- Oil = 2%
- EU27 = 46% of AGRi eX
- Other partner = Pakistan

**CENTRAL:**

- Oil = 77%
- Wood = 11%
- AGR = 6%
- EU27 = 70% of AGRi eX
- Other partner = China

Source: COMTRADE



**JRC** *ipts*

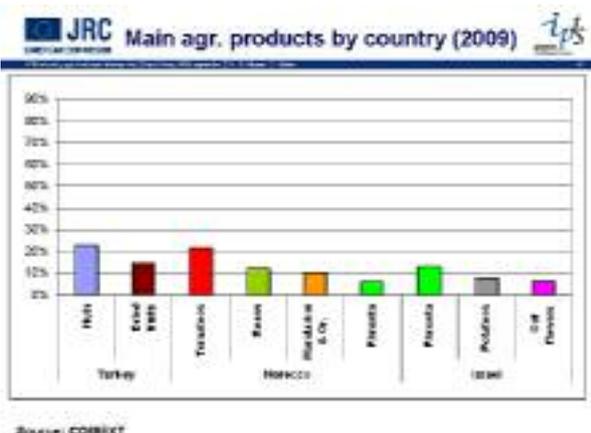
### A focus on Africa & MED agricultural exports to the EU27

Total agr. exports = 15.6 b€

AGRI = 10% of the exports

Africa & MED = 20% of EU agr. imports

Database: 2009 EUROSTAT (COMEXT)  
 AG nomenclature and the agricultural products are defined according to the WTO classification



**JRC** *ipts*

### Main Agr. exports to EU27 (2009)

**MED**  
 33% Fruits  
 23% Vegetables  
 13% F&V preparations

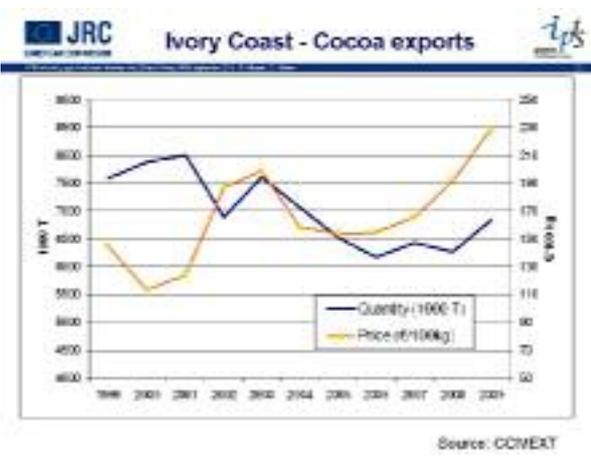
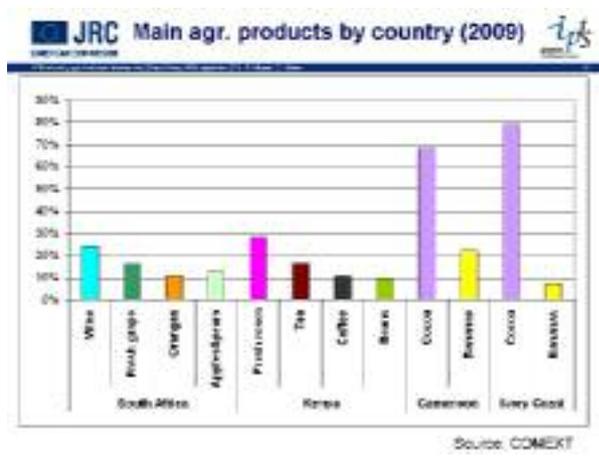
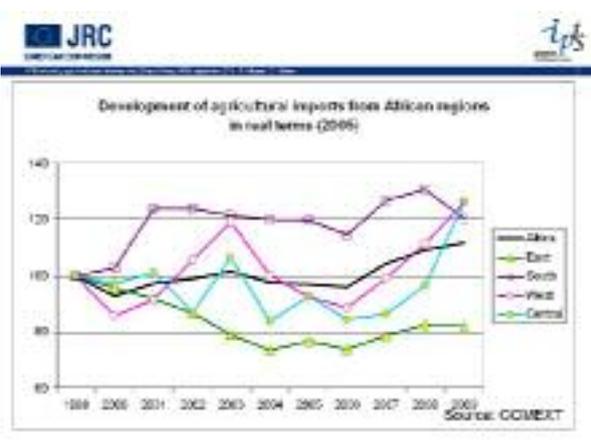
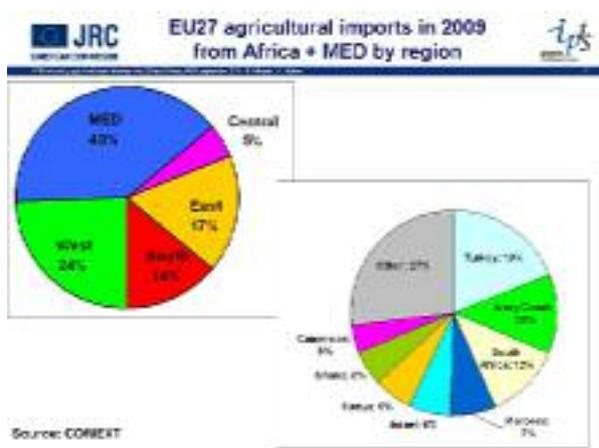
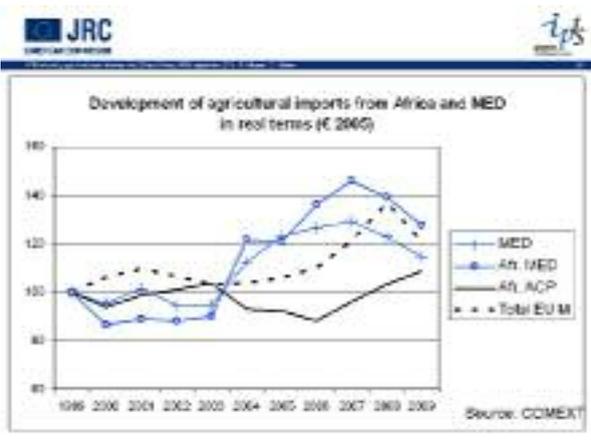
**East**  
 30% Coffee & Tea  
 22% Plants  
 13% Tobacco  
 13% Sugar

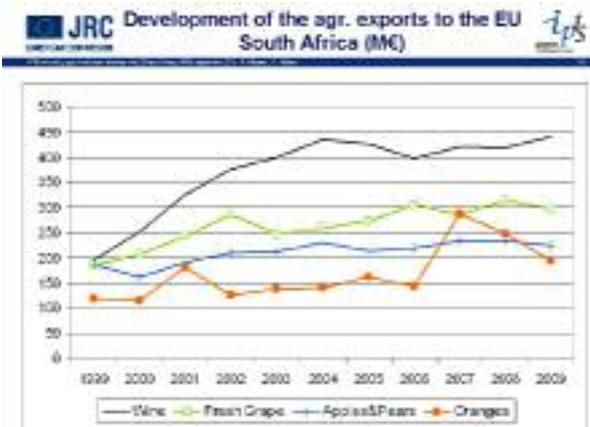
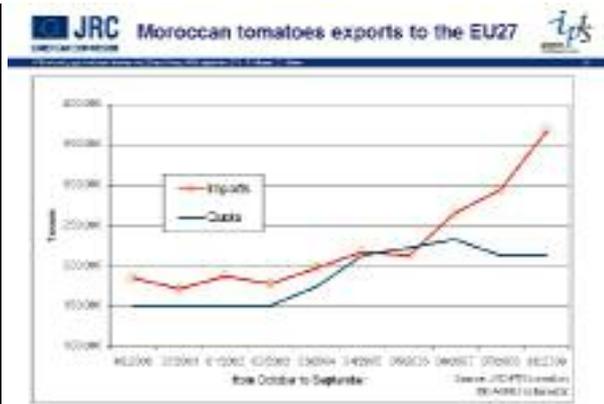
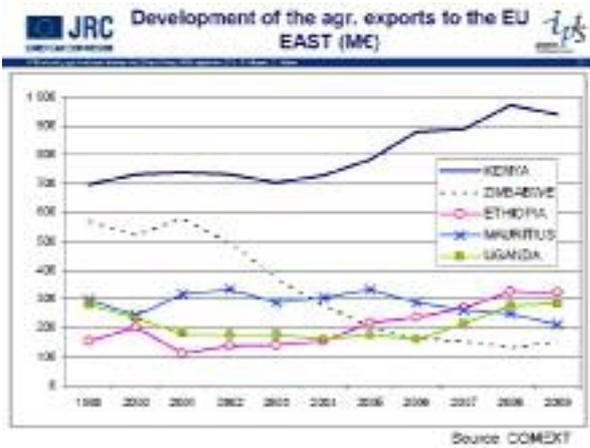
**West**  
 82% Cocoa  
 7% Fruits

**Central**  
 65% Cocoa  
 22% Fruits  
 7% Coffee & Tea

**South**  
 52% Fruits  
 22% Beverages

Source: COMEXT





**JRC** **Conclusions** *ipfs*

- Tariffs are not the only obstacle to export to the EU for many African countries?
- What are other reasons?
  - Supply capacity, diversification
  - Low competition
  - Under-industrialization
  - Lack of investments
  - Transport infrastructure & costs
  - Difficulties to meet EU requirements
  - ...

## NTM definitions and generalities

Andreas Schmidt (DG TRADE)

**Trade**

"Non Tariff Measures (NTM) affecting agro-food trade between the EU and Africa"  
 Seville, 9-10 September 2010  
 Institute for Prospective Technological Studies (IPTS),  
 Calle Teca de Garsilaso 3, ES-41010 Seville

**Session 1: trade flows and NTMs**  
 NTM definitions and generalities

Andreas Schmidt  
 European Commission DG Trade  
 F3: Food-related sectors  
 Andreas.Schmidt@ec.europa.eu

**Trade**

Non Tariff Measures (NTM) affecting agro-food trade between the EU and Africa  
 NTM definitions and generalities

Regulatory Framework for Trade  
 2. Import (Export) Formalities  
 - Customs control / inspection  
 - Presentation of forms and certificates  
 - Excise duty  
 - VAT or security

Trade Facilitation  
 Border Agreement  
 Transparency  
 Predictability  
 Fairness

**Trade**

Non Tariff Measures (NTM) affecting agro-food trade between the EU and Africa  
 NTM definitions and generalities

Non-Tariff Measures (Trade Barriers or Trade Support?)  
 [NTM affecting market access of Mediterranean and ACP trading partner]

Definition?

Regulatory Framework for Trade  
 1. Import (Export) Management  
 2. Import (Export) Requirements  
 3. Product Description  
   3.1. Marketing  
   3.2. Production  
 4. International Bodies  
 5. Dispute Settlement  
 6. Cost / Benefit of NTM  
 7. EU Export help-Desk

**Trade**

Non Tariff Measures (NTM) affecting agro-food trade between the EU and Africa  
 NTM definitions and generalities

Regulatory Framework for Trade  
 3. Product Description  
   3.1. Marketing  
     - Name (CN code, GI, Trade Mark)  
     - Quality (SPS, size, fair trade etc.)  
     - Labelling (according to customer)  
     - Packaging (Material, retail or end-use)  
     - Transport (Animal welfare, air-land-sea)

Traceability  
 BSL  
 Quality conformity  
 Origin

**Trade**

Non Tariff Measures (NTM) affecting agro-food trade between the EU and Africa  
 NTM definitions and generalities

Regulatory Framework for Trade  
 1. Import (Export) Management  
   - Import Licensing  
   - Quota Management

Trade Facilitation  
 (Preferential)  
 Transparency  
 Predictability  
 Fairness

**Trade**

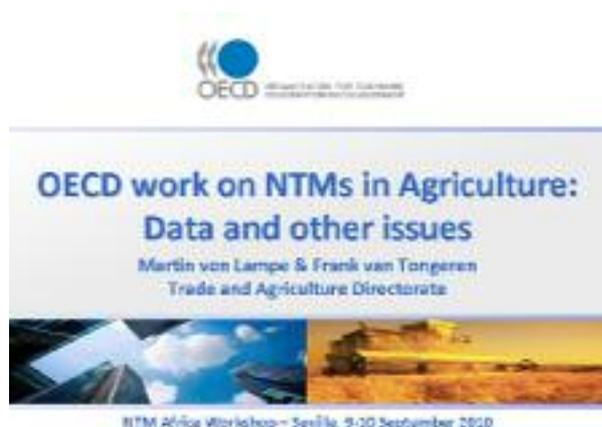
Non Tariff Measures (NTM) affecting agro-food trade between the EU and Africa  
 NTM definitions and generalities

Regulatory Framework for Trade  
 3. Product Description  
   3.2. Production (Standards)  
     Social and Environmental Conditions  
     Animal Welfare, Limitations on Use of Pesticides or Antibiotics,

Traceability  
 Border Agreements  
 Ethical / Cultural aspects



## OECD work on NTMs in Agriculture: Data and other issues Martin von Lampe (OECD)



### Outline

- Why OECD work on NTMs in agriculture?
- OECD analytical approach: costs and benefits
- How to collect data – options and choices
- An example for NTMs in South-North trade
- Further work

### Incidence of NTMs: Main points

- NTMs are important factor in international trade
  - Exporters have to comply, importers have to monitor
- Different purposes: correction of information asymmetries and other market failures, but also possibly protectionist purposes
- Not only South-North issue, but also South-South
- High NTM count does not automatically lead to more frictions
- Trade coverage and frictions are not synonymous either

### Premise of OECD work on NTMs

- A wider view...
  - NTM address societal concerns and market imperfections
  - Good regulation can facilitate trade and enhance demand
- Frictions arise because of regulatory heterogeneity
  - Different regulations and implementation, others...
- Comparative analysis of different ways to address the same issue
  - What is best practice/least cost solutions?

### What are NTMs?

- (A) Tariff and phyto-sanitary measures
- (B) Technical barriers to trade
- (C) Other technical measures
- (D) Price control measures
- (E) Quality control measures
- (F) Para-cert measures
- (G) Private measures
- (H) Anti-competitive measures
- (I) Export-related measures
- (J) Trade related non-tariff measures
- (K) Distribution restrictions
- (L) Restrictions on professional services
- (M) Subsidies
- (N) Government procurement restrictions
- (O) Intellectual property
- (P) Rules of origin

These are the most interesting for our purposes. They impact only indirectly on prices and quantities

### Protection of human health is most important motive

Purpose	Percentage (%)
Protection of human health	49.1
Protection of plant health	27.4
Protection of animal health and welfare	13.4
Protection of safety	8.2
Protection of environment	1.9

Source: TRADE, calculation OECD

Labelling is most frequent sub-measure in OECD

Measure Code	Measure Sub-code	Number of NTMs in total	% of NTMs
138	Labelled information	425	30%
136	Product certification requirements	246	18%
137	Prohibitions for certain product categories	249	18%
139	Standards for certain product categories	248	18%
135	Prohibitions for certain product categories	95	7%
134	Technical regulations	75	5%
133	Labeling requirements	121	9%
132	OECD Non-Tariff Measure Register	72	5%
131	Technical regulations for administrative purposes	22	2%
130	Technical regulations	32	2%
129	Prohibitions for certain product categories	1	0%
128	Prohibitions for certain product categories	1	0%
127	Prohibitions for certain product categories	1	0%
Total		1409	100%

Source: TRAINS, calculations OECD

Note: 14 096 observations, agro-food products, incl unpublished updates for MEX, EU, JPN

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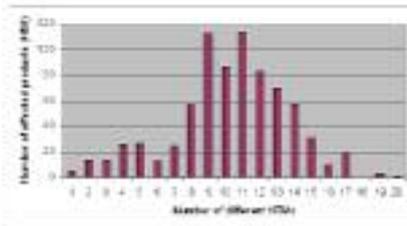
Data on NTMs: options and choices (1)

- Currently available international data have some potential caveats to keep in mind:
  - TRAINS and WTO data on NTM notifications:
    - possible bias towards countries with good notification discipline
    - only changes or new measures get notified.
  - WTO SPS IMS on Specific Trade Concerns:
    - only frictions moving to multilateral level get included
    - issues remaining at bilateral level missing
    - similar data base on TBT trade concerns

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Half of the products affected by 9 to 12 NTMs in OECD countries



Only 8 of the total of 777 products do not face any NTM in any OECD country

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Data on NTMs: options and choices (2)

- Currently available international data have some potential caveats to keep in mind:
  - Exporter surveys or complaints about perceived barriers
    - USTR National Trade Estimate Report on Foreign Trade Barriers
    - EU Market Access Data Base
    - Useful alternative or complement, but risks being biased
    - if survey is carefully designed, can be used in econometrics to yield W/tariff equivalent of NTM

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OECD analytical approach

- NTMs address externalities and market failures where trade acts as vector of externalities
- Consumer-based
  - External effects in consumption (e.g. animal welfare)
  - Asymmetric information; health safety or nutritional values
- Producer based
  - External effect in production (e.g. invasive species)
  - Asymmetric information

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Data on NTMs: options and choices (3)

- Documents on domestic regulation
  - Useful source for specific cases, but
    - very labour intensive if used to create larger data base
    - requires sector knowledge
- International trade data
  - COMTRADE
    - possible endogeneity bias
- Estimating 'net barriers' or tariff equivalents
  - Various methods based on e.g. gravity models
    - residuals w/ fixed effects
    - cross-sectional vs panel data set

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... more failures addressed by NTMs

- Global commons, an important subset
  - e.g. rainforest protection, CC mitigation
- Imperfect monitoring
  - failure of omission
  - if monitoring is imperfect, trade can collapse (FMD, BSE)
  - NTMs may be put in place to facilitate trade (e.g. Regionalisation)

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Data on NTMs: options and choices (4)

- Other data required for NTM analyses
  - Market data: potentially important problems related to NTMs affecting
    - subgroups of HS6 product lines (e.g., raw-milk Camembert and Brie cheese stored for less than 60d >2°C, imported by CAN)
    - subsets of trade partners (e.g., Russian meat imports from POU)
    - subperiods of marketing years (e.g. temporary import measures)

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### Summary of CB analysis

- **Key points:**
  - Distinguish actors that are concerned by given market imperfection from those that are not
  - Obtain assessment of welfare effects with and without NTM in place for those groups
  - PE model to capture market responses
- **Some results**
  - Trade restriction may sometimes be welfare optimal (both domestic and global) if proportion of concerned is 'big enough' and value of externality is 'big enough'

### What have we learned?

- NTMs are at interface between domestic regulation and trade: accept regulatory autonomy, while least trade restrictive
- Welfare effects > tariff welfare effects, but:
  - Systematic analysis of NTMs is possible using basic economics.
- Empirical application rests on obtaining realistic producer losses from (and consumer valuation for) externalities
- Classification/categorization of NTMs is a useful first step in its own right: who bears costs and benefits of measure? Rent sharing.
- Collect all measures on all products in all countries ????
- Data collection and parametrization of the framework remains a major issue in the evaluation process.

### Some issues

- Obtain willingness to pay to avoid externality
  - Methods: Experimental economics, choice experiments...
  - If human life is at stake WTP may not be appropriate, use QALYs etc.
- Fixed and variable costs of meeting standards -> market structure effects
- Monitoring and enforcement costs
- Transparency in NTM design: cost of obtaining information

### Further work

- Data on NTM incidences urgently needed
- More case studies?
- Going beyond the 'casuistic' approach
  - defining an impact matrix concern x measure?
- Need collaboration within the research community and across methods
- Data - both on NTMs and other related - remain an important issue
  - 'houses for courses': data collection should have analytical use in mind

### Example: EU imports of cut flowers (roses) from Kenya and other producers

- Kenya: world's fourth largest exporter of cut flowers (2006, after NED, COL, ECU)
- EU: most important destination (>90%) of Kenyan cut flower exports
- Objective of EU protective measures: limiting the introduction and spread of invasive species on cut flower production and trade
- Trade concern raised in WTO SPS Committee
- What are the economic consequences of the NTMs?

### Thank You

**Trade and Agriculture Directorate**



Visit our website:  
[www.oecd.org/TAD](http://www.oecd.org/TAD)

Contact:  
Martin.vonLampe@oecd.org

### Illustrative flower scenario results

	Market changes (per 1000 flowers)				Welfare changes		
	Kenya		Other producers		Kenya		
	1	2	3	4	1	2	3
<b>Kenya</b>							
Change in export volume	4,300	40,000	-100,000	40,000	4,000	4,000	4,000
Change in export price	0.00	-0.00	0.00	0.00	-0.00	-0.00	-0.00
Change in export revenue	17,300	16,000	-10,000	16,000	16,000	16,000	16,000
<b>Other</b>							
Change in export volume	0	0	0	0	0	0	0
Change in export price	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Change in export revenue	0	0	0	0	0	0	0
<b>EU</b>							
Change in import volume	40,000	140,000	1,200,000	140,000	40,000	40,000	40,000
Change in import price	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Change in import revenue	16,000	16,000	16,000	16,000	16,000	16,000	16,000
<b>Welfare</b>							
Change in total welfare	16,000	16,000	16,000	16,000	16,000	16,000	16,000
Change in total revenue	33,300	32,000	6,000	32,000	32,000	32,000	32,000

## National NTM data Alessandro Nicita (UNCTAD)

### National NTM data

#### National Regulations affecting traded products

- **What are we after?**
  - We want to know whether the import of a particular product in a particular country is subject to national regulations, and if so of what kind.
- **Where to look for these information?**
- **Primary sources**
  - Ministry of Trade, Ministry of Agriculture, Ministry of Environment (Env. Prot. Agencies), National Standard Body, Other Governmental Agencies that issue regulations.
- **Secondary Sources**
  - Country specific databases, WTO notifications, Other existing databases on any NTMs.

#### What information are collected?

Optimally we would like to collect:

- **The type of a measure**
  - Whether a specific product is affected by NTMs, and if so, of what type.
- **The source of a measure**
  - publisher name, law number, etc.
- **Date of entry into force**
  - and, if available, date of termination.
- **The countries affected by a measure**
  - Some measures may be imposed only on products originating from specific countries.
- **Whether the measure is temporary or permanent**
  - Some measures may be imposed only on a temporary or seasonal basis.
- **Purpose of a measure**
  - The practical reasons behind the existence of a measure.
- **The origin of a measure**
  - Whether the origin of the measure is national or international, or even private.

In practice not all these information are always available.

### Data collection procedures

1. Identifying sources
2. Collect the data
3. Standardize the data (same classification, same product level)
4. Verify and cross check

The pilot project evidenced that the complexity of collecting official data varies largely across countries.

The time required in collecting the data, and its quality and comprehensiveness are largely dependent on:

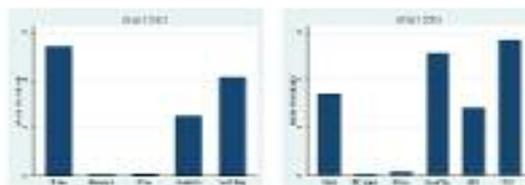
- Number of national agencies issuing regulations
- Availability of existing databases
- Format in which data
- Classification used

### Data collection procedures

- **Developing countries**
  - Local consultants
  - Regional Agencies
- **Developed countries**
  - UNCTAD and ITC
    - Documents and databases

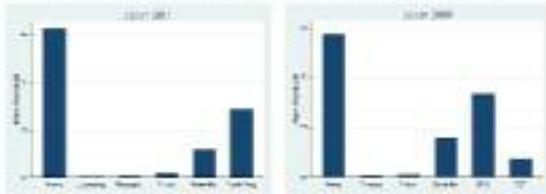
#### What the data looks like

- **Brazil: NTMs distribution 2001 vs 2008**



## What the data looks like

- Japan: NTMs distribution 2001 vs 2008



## Uses of data

- Just to know what is applied by who is important... we don't know much on how pervasive are NTMs.
- Time dimension (starting year)
- Econometrics
- Models
- researchers no limit

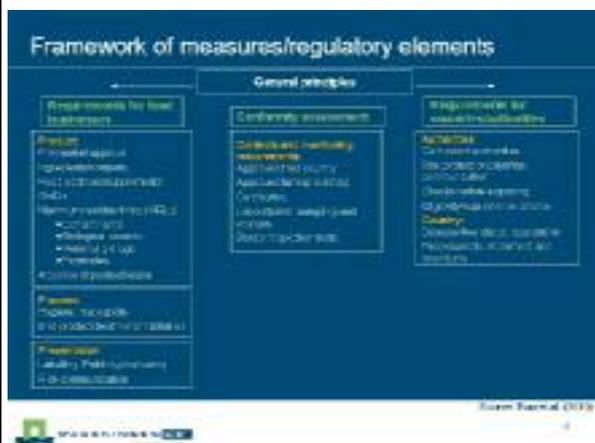
**Focus on EU SPS measures and the analysis of their impact**  
 Marie-Luise Rau (LEI)

**IPTS Workshop "NTMs affecting agri-food trade between the EU and Africa"**  
 Seville, 9-10 September 2010

**Focus on EU SPS measures and the analysis of their impact**

Marie-Luise Rau  
 Institute of Agricultural Economics (LEI), The Hague

**WAGeningenUR**



**Introduction - SPS measures in agri-food trade**

- Goal: food safety, plant and animal health
- SPS measures relevant in agri-food trade
  - Standards/regulation as import requirements
  - Vertical versus horizontal requirements
  - Public versus private requirements
- EU requirements that products have to satisfy to be sold on the EU common market
  - ⇒ more specific with regard to the IPTS project: African exporters' perspective

**WageningenUR**

**EU SPS measures - principles**

- Requirements are crucial in the EU market
  - Establishing EU common market with different policy areas involved: common agricultural policy (CAP), health and consumer protection
  - Strategies: harmonisation and mutual recognition
  - Mainly harmonisation for food safety
  - Requirements for animal products are generally more rigorous than those for plant products
- Requirements are formulated in EU law
  - Directive versus Regulations
  - Food safety: increasingly Regulations
    - ⇒ Harmonisation and level playing field for all member states
    - ⇒ Third countries face EU requirements to supply the markets in the member states, but there can also be tighter and/or additional requirements by individual member states.

**WageningenUR**

**Outline**

- Framework of measures/regulatory elements in international agri-food trade
- EU SPS measures - principles
- Analysis of SPS measures
- Main challenges in the analysis
- Concluding remarks

**WageningenUR**

**EU SPS measures – principles (cont.)**

- New EU food safety and hygiene package 2004
  - General food hygiene – more detailed requirements for animal products, feed and official controls
  - Centralization of EU food law and transparency, but also more rigorous and underlying firms' responsibility/liability
  - Provisions for third countries/exporters specified in the documents + guidance documents by DG Health and Consumer Protection

**WageningenUR**

### EU SPS measures – principles (cont.)

- **Main SPS import requirements for third countries**
  - Product standards (e.g. MRLs) and process standards
    - ⇒ HACCP standard not for primary producers
  - Veterinary and phytosanitary certificates
  - Pre-listing of firms (animal products), firm registration in third country (plant products)
  - List of countries eligible to export to EU (animal products)
  - Controls of compliance at the EU border related to risk of product and country of origin + documentary and identity checks
  - Competent authorities or equivalent in third country (animal products), accredited laboratories in third countries



### Concluding remarks

- **Systematic approach necessary for meaningful analysis**
  - Different effects of different measures, e.g. product/process requirement and conformity assessment
  - What are the crucial implications of the measure? What causes them? Different implications for different firm types?
- **Quantification of the impact**
  - Identification and measurement challenges
  - Relative differences of requirements matter
    - ⇒ domestic versus foreign requirements, and different requirements of different importing countries
  - Benchmark of analysis: without regulation there may be no trade
  - Costs and benefits: benefits of SPS measure
  - Aggregate analysis versus case study work



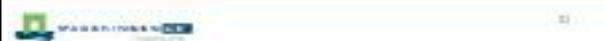
### Analysis of SPS measures

- **Identification versus quantification**
- **Quantification: trade, economic and welfare effect**
  - Given that measures achieve goal, price and quality effect
  - Costs and benefits for producers, consumers and government (micro-level)
  - Costs and benefits trigger trade, economic and welfare effect
- **Impact on trade is an empirical question**
  - Barrier: decrease in trade; relief: increase in trade; no change
  - Trade may not take place at all without measure
  - Causality between trade and requirements/standards
  - Empirical evidence by large missing: for literature review see for example Rau (2009)



### Thank you for your attention !

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### Analysis of SPS measures (cont.)

Research method	Level	Research aim
Stokey-type gravity-type models	• Two country & multi-country • Detailed & aggregate	• Trade effect (quantity effect) • Economic effect (mainly effects for producers, compliance costs)
GE simulation models	• Multi-country • Aggregate	• Trade effect (quantity & price) • Economic effect (producers' costs) • Welfare effect (consumer surplus)
PE simulation models	• Two country & multi-country • Detailed case studies	• Trade effect (quantity & price) • Economic effect (producers' costs) • Welfare effect (consumer surplus) • Cost-benefit-analysis

Source: based on Korinek et al. (2008).



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- Korinek, J., Miazec, M. and M.-L. Rau (2008), A review of methods for quantifying the trade effects of standards in the agri-food sector, OECD Trade Policy Working Paper No.70, Paris
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- WTO (2000), Trade, Standards and the WTO, World Trade Report 2000, Geneva



### Main challenges in the analysis

- **Challenges in the measurement of requirements:**
  - Relevant versus irrelevant / binding versus non-binding
  - Matching of requirements and products
  - Information conflicts, numerical elements and no regulation
  - Aggregation over detailed products and measures
- **Challenges in the quantification of the impact**
  - Determining the stringency (relative stringency)
  - Measuring costs and benefits for different actors
    - ⇒ mainly producers' costs – e.g. survey of exporters in developing countries (e.g. World Bank, 2005)
    - ⇒ mainly consumers' benefits (willingness-to-pay) – see literature review for example Caswell and Joseph (2007)
  - Perspective: exporting / importing country
    - ⇒ effect in domestic versus foreign market
  - Benchmark: "before – after" / "without – with"



### Perspective of producers/exporters

Examples of opportunities	Examples of challenges
<ul style="list-style-type: none"> <li>• Improved production efficiency: advanced technology, productivity increase, reduced costs</li> <li>• Better management: improved control, less recalls</li> <li>• Information benefits</li> <li>• Spill-over effects over time, e.g. upgrading of sector, infrastructure</li> <li>• Specialization in market segments/niches: markets of high value products with higher prices (food quality beyond safety)</li> <li>• Market access: Trade may not at all take place without standards</li> </ul>	<ul style="list-style-type: none"> <li>• Increase in costs due to standards:                     <ul style="list-style-type: none"> <li>• variable costs: less production, less trade</li> <li>• fixed costs: treatment costs, market entry barrier</li> </ul> </li> <li>• Difficulties for small and medium size producers</li> <li>• Difficulties due to changing standards/information problem</li> <li>• Higher market concentration, increased price and quality competition</li> <li>• Dependence on export destination, mainly high income countries</li> </ul>



## African Agricultural and Food Exports to the EU: Obstacles to trade

Hubertus Gay (JRC-IPTS)

**JRC** *ipts*



### African Agricultural and Food Exports to the EU: Obstacles to Trade

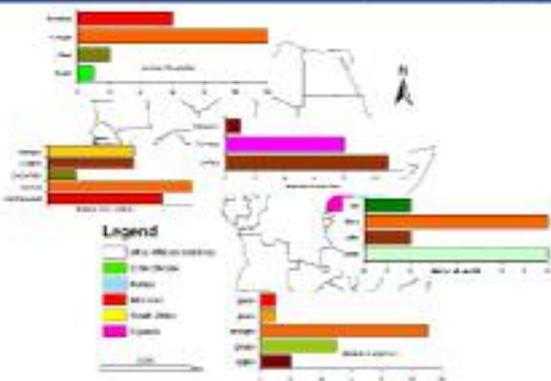
8 September 2010  
Dordrecht

Stephan Hubertus Gay  
Institute for Prospective Technological Studies (IPTS)  
Joint Research Centre (JRC)  
European Commission

**JRC** *ipts* Introduction

- Considerable tariff reductions or concessions for African countries provided by the EU
  - e.g. Lomé/Cotonou Agreements (African Caribbean Pacific (ACP) countries), Generalised System of Preferences (GSP), Everything-But-Action (EBA), Euro-Med Association Agreements, Trade and Development Cooperation Agreement (TDCA) and Economic Partnership Agreements (EPA)
- Focus on other obstacles for African agricultural and food exports to the EU
- Structured exporter survey in 2009
- Carried out by Sociedade Portuguesa de Inovação (SPI) and local partners

**JRC** *ipts* Included countries and products



**Legend**

- Orange: Agricultural products
- Green: Foodstuffs
- Red: Beverages
- Yellow: Textiles
- Purple: Other

**JRC** *ipts* Exporters questionnaires

- 95 questionnaire replies, with 20 each from Uganda, South Africa, Morocco and Kenya, and 15 from Côte d'Ivoire
- Selection of exporters
  - completed questionnaires in due time
  - represent the largest possible array of main commodities exported by the respective country
- Assessment of obstacles to trade
  - closed grading of specific obstacles
  - specific questions (including quantification)

**JRC** *ipts* Categories used in the survey

Category	Description
Taxes and Subsidies	European and African government participation in trade and restrictive policies (subsidies, tax benefits, and government monopoly positions)
Customs Procedures	Customs and administrative entry procedures (sampling, import licensing, pre-shipment inspection, customs classification, and anti-dumping duties)
Standards and Regulations	Technical Barriers to Trade (specific labeling requirements related to food safety issues, packaging requirements, and quality requirements for fresh food) Sanitary and Phytosanitary Measures (chemical residue limits, testing, certification of food safety, labeling requirements related to food safety)
Specific Limitations	Specific limitations (embargoes, tariff quotas, export taxes, trade agreements, export rebates, and export/import quantity restrictions)
Distribution Chain and Infrastructure	Others (communication and infrastructure)

**JRC** *ipts* Taxes and Subsidies

Country	1	2	3	4	5
1) African Government subsidies (direct or indirect) on production, processing or distribution of goods	40	3	55	11	11
2) EU subsidies (from 2000-2007 export refunds and export refunds on agricultural products, export refunds on agricultural products, export refunds on agricultural products, export refunds on agricultural products)	96	14	75	4	2
3) European Union payments (direct or indirect) on production, processing or distribution of goods (from 2000-2007 export refunds and export refunds on agricultural products)	33	33	44	1	3
4) African Government subsidies (direct or indirect) on production, processing or distribution of goods (from 2000-2007 export refunds and export refunds on agricultural products)	44	1	73	1	1
5) European Union subsidies (direct or indirect) on production, processing or distribution of goods (from 2000-2007 export refunds and export refunds on agricultural products)	38	23	45	1	1
6) African Government subsidies (direct or indirect) on production, processing or distribution of goods (from 2000-2007 export refunds and export refunds on agricultural products)	33	27	43	3	3
7) African Government subsidies (direct or indirect) on production, processing or distribution of goods (from 2000-2007 export refunds and export refunds on agricultural products)	4	24	52	1	3

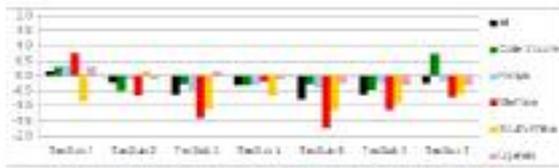
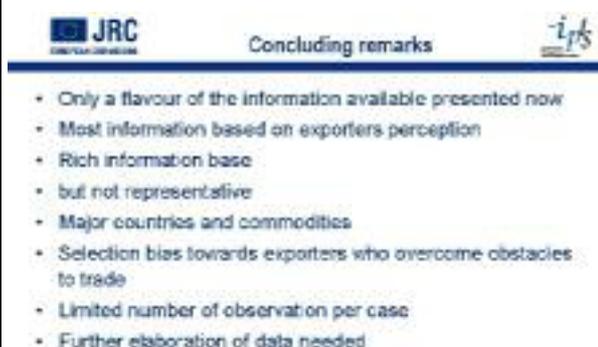
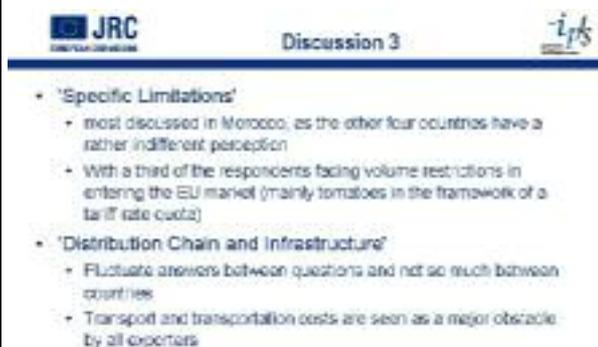
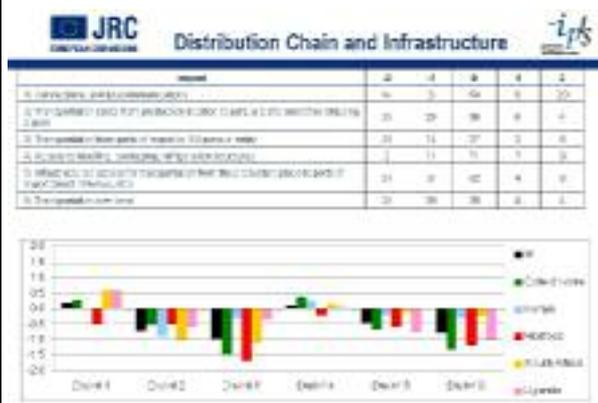


Fig. 21: Tax and Subsidies (1) from Hubertus Gay et al. (2010) p. 27





**Thank you!**

## Introduction on Exporter view Leonard Mizzi (DG AGRI)



**NTM and market access: ACPs and Mediterranean**

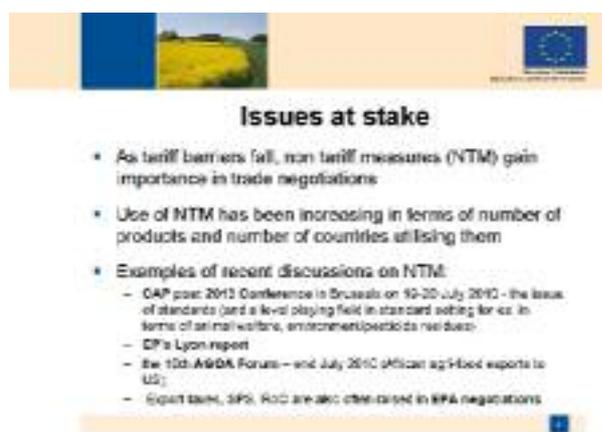
**Leonard Mizzi**  
DG Agriculture and Rural Development  
Unit A3: ACP, South Africa and PAC/CS  
9 September 2010



**Commodity/Sector Specific**

- Sanitary measures (meat, dairy)
- Bans (all products)
- State trading enterprises (STE) – grains
- Quantitative restrictions (QR)
- Marketing standards (quality policy, « fair trade »)

→ (But these vary depending on whether they originate from developed or developing countries.)  
→ Is incidence of NTMs higher in agriculture than manufacturing?  
→ How will this impact economic development and food security?  
→ NTM as trade barriers, a help to introduce higher standards internally?



**Issues at stake**

- As tariff barriers fall, non tariff measures (NTM) gain importance in trade negotiations
- Use of NTM has been increasing in terms of number of products and number of countries utilising them
- Examples of recent discussions on NTM:
  - CAP post 2013 Conference in Brussels on 10-20 July 2010 - the issue of standards (and a level playing field in standard setting for ex. in terms of animal welfare, environment/pesticides residues)
  - EPA Lyon report
  - the 10th ACP/EA Forum – end July 2010 (African ag-food exports to EU)
  - Export bans, SPS, ACP are also discussed in EPA negotiations



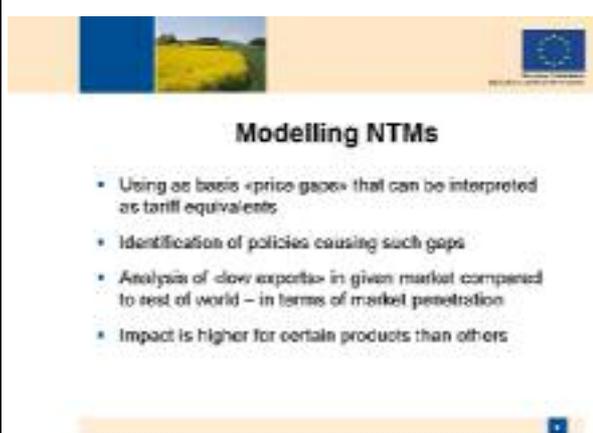
**Main issues**

- NTM including food safety measures, are deemed a major constraint in market access, especially for small farmers and SMEs
- Organics: US – recognition, equivalency and export, EU equivalence (Israel, Tunisia) Control bodies – recent study for EPA (cost of certification/lack of scale economies)
- What about the emergence of private certification standards? Do they generate higher complexities/compliance than government rules?
- Not easy to isolate the effect of one measure on trade flows



**Definitional Issues**

- SPS issues (Health, Contamination, rules for GMOs)
- Regulations and standards: quality, labelling and packaging, social and environmental requirements)
- Bans, Monitoring and licensing (export bans for wheat or rice and export taxes)
- Customs
- Other trade related procedures, regulations
- Non tariff measures vs. Non tariff barriers
  - (binding WTO rules: non-discrimination and prevention of disguised restriction on international trade)



**Modelling NTMs**

- Using as basis «price gaps» that can be interpreted as tariff equivalents
- Identification of policies causing such gaps
- Analysis of «low exports» in given market compared to rest of world – in terms of market penetration
- Impact is higher for certain products than others



### Measuring NTM in Euro-Med and ACPs

- Sustainability Impact Assessment (2007): Labeling, GIs, Cumulation of rules of origin, organics (equivalence), quality
- Impact in Agadir Agreement (not tested)
- ACPs: CTA, COLEACP-PIP work – SPS, traceability and labeling, HACCP, TradeCom trainings (Gis, RoO)
- Databases – notifications of sanitary and technical requirements, and data on past or present trade disputes between companies and between countries. The private sector is not always aware of the international regulatory environment in their respective product areas.
  - EU Market Access Database on NTM in third countries
  - SPS Export database



### Final Conclusion

- New areas of NTM, environmental-related measures (in guise of green growth), fish and forestry – so called resources-trade which remains undifferentiated territory in trade policy. But food safety standards are clearly the main constraints in terms of market access for ACPs
- What should be done at a bilateral level in context of lack of progress in DCA?
  - Calls for better monitoring of NTMs
  - NTM should not be means of discrimination or disguised restriction on international trade
  - Bilateral/regional dialogue on NTMs, trade facilitation, development aid and Aid for Trade in agriculture



### Conclusion - contd

- Need for enhanced cooperation: EU, African Union, World Bank, UNCTAD and UNIDO
- Governance issues – Codex, WTO, etc
- Future Trade Policy/EU2020
- Future Communication on CAP post 2013
- EU Communication on quality policy (i.e. best practice guidelines for the creation of certification schemes relating to agricultural products and foodstuffs –with development considerations)
- Future enhanced role of ATPC – African Trade Policy Centre (follow up to recent workshop in Kenya in April which focused on NAMA) – Trade and Environment Experts' Network



**Thank you for attention!**

leonard.mizzi@ec.europa.eu

## The exporters' point of view - Tunisia

Benjamin van Doorslaer (JRC-IPTS)

<p><b>The exporters point of view - Tunisia</b></p> <p>Myriam Khefif Ben Mohamed Presented by Benjamin Van Doorslaer (JRC-SEVILLA)</p> <p>IPTS – Institute for Prospective Technological Studies Agriculture and Life Sciences in the Economy Unit, Sevilla, Spain</p>	<p><b>Certification and traceability</b></p> <ul style="list-style-type: none"> <li>• EU quality standards : changing over time and getting higher</li> <li>• phytoanalytical analyses on pH, fatness and color               <ul style="list-style-type: none"> <li>••••• very restrictive microbiological analyses</li> </ul> </li> <li>• Needs :               <ul style="list-style-type: none"> <li>– Investment in expensive equipment, ...</li> <li>– More scientific research and development</li> </ul> </li> </ul> <p>but limitations ... profitability of the company in danger !!!</p>
<p><b>OLIVA SA : a niche player</b></p> <ul style="list-style-type: none"> <li>• Tunisian SME, started in 2004, olive sector</li> <li>• Present capacity : 500 ton of table olives / year</li> <li>• Traditional conservation and transformation methods</li> <li>• Organic producer certified by European company since 2007</li> <li>• Mainly exporting table olives to France and Italy</li> </ul> <p>&gt;&gt;&gt; niche player, concerned about sustainability</p>	<p><b>Certification and traceability</b></p> <ul style="list-style-type: none"> <li>• Cooperation with foreign investors</li> <li>• Tunisian government :               <ul style="list-style-type: none"> <li>– reducing administrative burden</li> <li>– no restrictions on purchase of land by foreign companies for industrial development</li> </ul> </li> <li>• Effects :               <ul style="list-style-type: none"> <li>– Rapid decline of local SMEs in olive sector</li> <li>– Replaced by large foreign food production and processing companies</li> </ul> </li> </ul>
<p><b>Exports to EU</b></p> <ul style="list-style-type: none"> <li>• Main problem : certification and traceability requirements</li> <li>• Getting too high !</li> <li>• Tunisian farmers are not prepared or willing to change their production system : don't adopt new rules, also supplying</li> <li>• Consequences :               <ul style="list-style-type: none"> <li>– Availability of primary commodities decreases</li> <li>– Prices 'exportable' olives increase</li> <li>– Impossible to ensure regular exports to EU clients</li> <li>– Difficult to keep export prices at agreed level</li> </ul> </li> </ul>	<p><b>Reorientation towards Africa</b></p> <ul style="list-style-type: none"> <li>• International crisis : decrease of EU demand</li> <li>• Exports of Tunisia to EU : 17 % down in 2009</li> </ul> <p>BUT !</p> <ul style="list-style-type: none"> <li>• Exports to Sub-Saharan Africa : + 15 %</li> <li>• 2010 : trade agreement between Tunisia and the West African Economic and Monetary Union (72 mio inhab.)</li> </ul>

### Conclusions

- NTM give rise to extra direct and indirect costs
- Future of SME in olive sector is at stake
- Reorientation of exports to other African countries

## Improving market access to the EU: measures to overcome SPS and related Non-Tariff Barriers

Martin Doherty (Cerrex Ltd)

### IMPROVING MARKET ACCESS TO THE EU: MEASURES TO OVERCOME SPS AND RELATED NON-TARIFF BARRIERS

By  
Martin Doherty

#### PUBLIC SECTOR

Insufficient resources can result in:

- Inadequate testing facilities
- Un-enforced legislation by inspectors

Political and cultural issues can impact:

- Co-operation between Ministries
- Co-operation with private sector representatives

#### THE PROBLEM

- New foods in new markets have introduced new risks.
- EU requirements are getting stricter.
- Developing countries lack human, financial and technical resources.

#### PRIVATE SECTOR

- Compliance with SPS legislation is not enough.
- Supporting infrastructure can impede trade.
- Role of public sector is crucial in creating a trade friendly environment.

#### WHO IS IMPACTED AND HOW?

- Public Sector
  - Competent Authorities
  - National Food Control Systems
- Private Sector
  - Primary producers
  - Food processors
  - Transporters
  - Storage

#### DEFICIENCIES RESTRICTING TRADE

Successful SPS compliance is impacted by non SPS factors

- Storage at ports/ airports
- Refrigeration facilities at ports/ airports
- Port handling and processing procedures
- Unreliable electricity supply
- Appropriate transportation
- Dependency on imported packaging and product

## ROLE OF THE SERVICE SECTOR

**An SPS supportive service sector is vital**

- Technical and educational support services
- Information/ database access about SPS requirements
- Commercially viable finance for SPS system eg. HACCP
- Targeted schemes to help small enterprises

7

## OBJECTIVES AND ISSUES FOR EPA TEXT

- Clarification of partners' approach to ambiguities in WTO/SPS Agreement.
- Identification of candidates for Equivalence Agreements with the EU and specific assistance to achieve this.

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## BENEFITS

- Sectors will move up value chain.
  - Food processing
- New product sectors will emerge.
  - Aquaculture
- New service sectors will develop.
  - Specialised consultancy
  - Certification
  - Servicing/ repair
  - Training and education

8

## FOR THE REGIONAL PREPARATORY TASK FORCE (RPTF)

- Regional information alert systems
- Regional monitoring and planning
- Harmonisation of standards in selected product areas
- Establishment of Centres of Excellence in specialised areas

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## THE IMPORTANCE OF SPS IN EU/ACP ECONOMIC PARTNERSHIP AGREEMENTS (EPA)

**Represent an opportunity to:**

- Resolve contentious issues.
- Obtain specific assistance for specific problems.
- Establish mechanisms to ensure commitments are fulfilled.
- Enhance regional integration.
- Tackle trans-boundary diseases on a regional basis.
- Contribute to development – poverty, health, employment.

8

## CONTRIBUTING TO INTERNAL POLICY DEVELOPMENT IN A REGION AND MEMBER STATES

- Flanking measures to support SPS implementation
- Establish Hubs of Expertise
- Public/ private sector partnerships

15

## STRATEGIC APPROACH

**SPS issues have differing characteristics and need to be addressed in different ways:**

- Objectives and issues that are key principles and therefore text for the EPA.
- Those that should be fed into RPTF process.
- Those contributing to internal policy development in a region and in member states.

16

## FINALLY

**SPS encompasses much more than technical standards and has the potential to contribute significantly not only to the development of existing trade but also to the development of new trading markets within the African Continent.**

**Thank you**

14

## Technical Quality Standards, Norms, and Sanitary and PhytoSanitary Measures Affecting Market Access of Mediterranean and ACP Products: the Case of Morocco

Mohamed El-Otmani (Institut Agronomique et Vétérinaire Hassan II)



WORKSHOP ON NON-TARIFF MEASURES AFFECTING AGRICULTURAL TRADE BETWEEN THE EU AND AFRICA  
(BOULEVARD, 1405000, 2008)

### Technical Quality Standards, Norms, and Sanitary and PhytoSanitary Measures Affecting Market Access of Mediterranean and ACP Products: the Case of Morocco

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E-mail: elotmani@fvh.hassan2.ma



### Economic Indicators of Morocco's Agriculture

- Morocco has a liberalized emerging economy;
- About half the population lives in rural areas;
- Agricultural activities are often the sole income source for most of the work force in rural areas;
- Agricultural activities contribute to improving the livelihood of rural populations and, thus, contribute to reducing rural exodus and immigration;
- Morocco's main economic sectors are: agriculture, tourisme, fisheries and workforce residing abroad;
- Agriculture represents 12-25% of the Gross Domestic Product (depending on climate (rain mainly)).



### Importance of Morocco's agricultural exports and imports

- Morocco's agricultural exports represent less than 0.5% of total world agricultural trade;
- Agricultural exports have increased by 50% from 2000 to 2006 but not necessarily to the EU market;
- In 2006, agricultural exports amounted to 2.6 billion \$US;
- In 2006, agricultural exports represent 21% of total Morocco's total export value.



### Main Crops Produced in Morocco

#### 1- Annual crops (in 1000 ha)

Fall grain cereals (wheat, barley)	5,289.0
Spring grain cereals (corn, rice)	250.0
Food legumes	373.0
Sunflower	29.1
Vegetables	269.5
Sugar beet	50.4
Sugar cane	16.5
Fodder	455.0
<b>Total</b>	<b>6,732.5</b>

10/10/2008



### Main Crops Produced in Morocco

#### 2- Perennial crops (in 1000 ha)

Olive	600.0
Pome and stone fruit	201.4
Citrus	81.5
Grapes	50.3
Figs	44.0
Date palm	48.0
Pomegranate	5.0
Banana	5.5
<b>Total</b>	<b>1,035.7</b>

10/10/2008



### Main Morocco Exported Agricultural Food Products (Office de Changes, 2009)

Exported products type	Year 2007		Year 2008 (est. Jan. 2009)	
	Quantity (t/metric tons)	Value (in \$MUS)	Quantity (t/metric tons)	Value (in \$MUS)
<b>Food products</b>	6,671,049	31,699,734	1,863,047	34,879,134
Vegetable oils (olive, sunflower and cottonseed oil, soya and castor)	24,292	1,897,931	298,151	817,750
Fresh fruit	89,629	1,872,847	127,939	23,799,824
Processed fruit	4,987	1,479,411	5,899	19,249,141
Dried vegetable	224	470	234	460
Dry legumes	1,423	1,034,100	1,000	1,139,411
Fresh citrus fruit	477,829	2,409,713	1,028,713	21,966,669
Dried fruit (various)	325	679,611	125	1,949,111
Dried and vegetable juices	761	693	1,034	1,222,111
Vegetable proteins	177,914	1,028,699	77,011	23,028,111
Dried yeast	1,034	1,870,411	914	1,787,111
Other food, beverage products	1,949	1,499,111	17,473	30,128,111
Other food products	19,249	1,870,411	1,803	8,919,111
<b>TOTAL AGRIC. EXPORTS INCLUDING OTHER CROPS</b>	<b>24,942,248</b>	<b>113,865,241</b>	<b>26,488,699</b>	<b>148,371,741</b>
<b>TOTAL AGRIC. EXPORTS</b>	<b>20,772,248</b>	<b>24,294,439</b>	<b>23,962,714</b>	<b>296,392,270</b>
Proportional agricultural food exports (excluding other crops)		47.4		18.7

10/10/2008

10/10/2008



### Technical Non-Tariff Measures Applied by EU countries on Moroccan Agricultural Exports

- They can take various forms
  - Limitation of quantities to be exported per year/month/week during the export season (example: tomatoes; clementines);
  - Quality standards;
  - Technical regulations;
  - Sanitary and phytosanitary measures;
  - Required certifications (GlobalGAP, BRC, HACCP, Tesco Nature's Choice, Organic, Protected Geographic Indication, etc.).

10 | P. Oued



**Limitation of export volumes during export season:** Quotas applied on specific crops during the production season: example for tomatoes

Month	Year			
	2013/2014	2014/2015	2015/2016	2016/2017 and beyond
October	10 000	10 000	10 000	10 000
November	25 000	26 000	26 000	25 000
December	30 000	30 000	30 000	30 000
January	30 000	30 000	30 000	30 000
February	30 000	30 000	30 000	30 000
March	30 000	30 000	30 000	30 000
April	15 000	15 000	15 000	15 000
May	4 000	4 000	4 000	4 000
Additional contingent applied from 1 Nov. to 31 May	A	15 000	15 000	15 000
	B	15 000	15 000	15 000

The additional contingent (A) applies to the 50 tonnes per year for use of available contingent (total of second additional contingent) export year. In 2016/2017, the 15 000 tonnes of the total volume of each contingent for each month has exceeded total volume agreed between the two parties.

10 | P. Oued



### Produce quality standards imposed by the importing country

These include criteria such as those related to internal composition of the product (fruit, vegetable) and to its palatability:

- Internal composition (Acid content; Sugar content; Juiciness);
- Sugar-to-acid ratio (maturity index);
- Absence of seeds in fruits (such as citrus): can be used to regulate produce entry into the EU market;
- Size: certain size classes can be either limited in tonnage or totally prohibited in the market by the importing country to reduce volumes.

10 | P. Oued

Example: size classes for clementine mandarin

Size class	Equatorial diameter (mm)
1	> 64
2	59-70
3	55-65
4	51-61
5	47-57
6	44-53
7	42-49
8	40-47
9	38-45
10	36-43



### Produce quality standards imposed by the importing country

These include criteria such as those related to product aesthetic appearance:

- Shape: has to be specific to the variety; misshapen produce should be discarded;
- Color (flesh and peel): has to be specific to the variety and the developmental stage required; off product is discarded even if all other criteria are satisfactory (tomatoes, citrus);
- Absence of surface scars and blemishes as from insect or wind damage or harvest and postharvest handling.

10 | P. Oued



### Produce quality standards imposed by the importing country

These include criteria such as those related to produce texture and turgidity:

- Firmness: produce has to be firm and prevents no signs of wilting as from water loss;
- Freshness: produce should present signs of having been recently harvested (turgid; shines; no wilting; green sepals such as for citrus and tomatoes)

10 | P. Oued



### Technical Measures Related to Packaging

Countries and supermarket chains differ in their requirements with regards to:

- Packaging material: wooden (prohibited in some countries as it may bring in disease and insects?), carton, plastic (reusable folding boxes) etc.;
- Package size and dimensions (length, width, height) according to the objective (family size box, bulk box ...);
- Colors of the packaging boxes (specific to supply chains);
- Package composition and inclusions (with regard to environmental preservation, and food safety issues for example)

10 | P. Oued



### Technical Measures Related to Labelling

Countries and supermarket chains may differ in their requirements with regards to labelling including:

- Name of packinghouse of origin for immediate recognition of origin of the product;
- Packages must carry information (often in the form of bar-code) to enable importers to trace produce upstream all the way to the farm and production field (can be on pallets only or on individual boxes);
- Packages must carry information on postharvest treatments applied on produce (for example: fungicide, wax type);
- Labelling of individual fruits for retailing purposes;
- Labelling packages indicating the composition of the produce for consumer information.

10 | P. Oued



### Certifications and implementation of specific food safety standards

- These aspects had started with food safety and sanitation at the food processing units (meats, food preserves, canned foods etc.) as a result of the several food poisonings that occurred in the past as from microorganisms and other contaminants of food;
- These food processors implemented ISO 9000 series for management and food processes and HACCP standard for sanitary and food safety issues.
- As a result and to avoid any surprises at the import and of the supply chain of agrofood, importers started requiring that packinghouses implement food safety standards such as ISO 22000 and HACCP.
- To avoid food contamination from the farm as from pesticides, humans etc., other certifications appeared: EurepGAP/GlobalGAP in early 2000s.

18/11/2024



### Technical Regulations Related to Product Safety

These standards got complicated with time. Several standards and certification schemes exist and they mostly concern:

- Maximizing profitability in a sustainable production system through:
  - Use and optimisation and good use of agrochemicals (fertilisers; pesticides);
  - Optimisation of use of natural resources (land, water, energy);
- Health and safety of the workers;
- Social welfare and work conditions of labor;
- Recycling and reuse of waste materials;
- Implementing actions resulting in preservation of wildlife and of the landscape.

NB: Implementation of each one of these certifications/standards is costly to the producer, the packer and the exporter.

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### Technical Measures Related to Trade Documents

These include mainly documents that should be produced by the exporter such as:

- certificate of origin;
- certificate of authenticity, etc.

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### Technical Measures Related to Multiplicity of Check Points

- Multiple checks points that the merchandise has to go through before it arrives to the destination market;

This causes delays and contributes to the deterioration of produce quality, particularly for the highly perishables.

18/11/2024



### Sanitary and Phytosanitary Measures Affecting Moroccan Agricultural Exports to EU

These include:

- Shipping only disease and insect-free product (contradiction between conventional and organic agriculture);
- Use of only agrochemicals registered in the country of origin of the produce: list is shrinking every year;
- Use of only agrochemicals registered in the destination market: list is shrinking every year and varies between countries;
- Some of the currently used active chemicals may have no substitutes yet and are or will be banned from use (example: use of methyl bromide for soil disinfection against pathogens that reduce yield and quality of produce in vegetables, flowers, etc.).

18/11/2024



### Sanitary and Phytosanitary Measures Affecting Moroccan Agricultural Exports to EU

These include:

- Maximum residue limit (MRL) for pesticides applied on produce for quality preservation or for enhancement of aesthetic quality: the allowed limit is also becoming smaller every year;
- These MRLs often differ between countries and change from year-to-year;
- Most of these MRLs are in some cases less than the detectable amounts, indirectly meaning that these agrochemicals should not be used at all;
- To justify that exported produce has met the prescribed MRL standards, MRL data should be obtained from certified laboratories only (the cost of certifying laboratories for residue and other analyses in line with ISO standards is very expensive).

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# A tariff equivalent of non-tariff measures on European horticultural and fish imports from African countries

Nicodeme Nimenya (Université Catholique de Louvain la Neuve)



## A tariff equivalent of non-tariff measures on European horticultural and fish imports from African countries

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*Workshop on Non-tariff measures affecting agro-food trade between the EU and Africa*

Sept 10, 9-10 September 2010  
European Commission, Joint Research Centre  
Institute for Prospective Technological Studies (IPTS)  
Via Enea 6, Ispra 21020, Italy

Workshop on NTMs in the EU-Africa agro-food trade, 9-10 September 2010, IPTS, Ispra (Italy)




## The price-wedge method: principles & applications

- In the gap between world & import prices, correction for tariffs, internal & c.a.f. transport costs
  - Robinson et al. (1997), Colin & Robinson (2008, 2009)
  - Englin & Shumway (2009)
  - Yeo et al. (2009)
  - Barratt (2005)
- Why the price-wedge method?
  - NTB rooted in determinants of comparative advantages: endowments, technology, income, preferences (Sanson et al., 1993), (Chand, 2002).
  - A tariffication effect (Roberts et al., 1999) from non-discriminatory NTB with asymmetric compliance costs (Wilson, 2005).

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## Outline

- Introduction
- Tarif equivalent of tariff business
  - The price-wedge method: principles & applications
  - The analytical framework
- Data description & preliminary analysis
- Economic estimation & results
- Concluding remarks

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## The analytical framework (1/2)

- On demand side: Armington (1969) differentiation
  - a nested CES consumer utility function
 
$$U_i = \left[ \alpha_i u_i^{\sigma} + (1 - \alpha_i) \left( \sum_{j \neq i} \beta_{ij} v_j^{\sigma} \right)^{\frac{\sigma}{1-\sigma}} \right]^{\frac{1-\sigma}{1-\sigma}}$$
 subject to  $p_i x_i + \sum_{j \neq i} p_j v_j = Y_i$
  - a Mankiwian demand for imports & domestic goods
 
$$\frac{d_i}{d_i} = \left[ \frac{\alpha_i}{1 - \alpha_i} \frac{p_i}{p_j} \right]^{-\frac{1}{\sigma}} \quad d_j = p_j x_j + \alpha_j Y_j + \alpha_j Y_i$$
  - analytical expression of the tariff equivalent
 
$$T_i = p_i \left[ \frac{1 - \alpha_i}{\alpha_i} \right] \left( \frac{d_i}{d_i} \right)^{\frac{1}{\sigma}} - (p_i + \alpha_i Y_j + \alpha_i Y_i)$$

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## Context & research question

- EU-ACP preferential trade agreements (Yaoundé-Cotonou)
- Poor performance of ACP countries in EU global trade: 5% (1976) 3.5% while BRIC doubles its share in the last 15 years (Barratt)
- Success in FTV & fish in some ACP countries: EAC, Ethiopia, Gambia, Senegal, Zambia, etc.
- Non-tariff measures (NTMs) trade barriers as catalyze> scientific & technical capacity building, poor institutions in an external regulatory pressure.
- Custom tariff rate to export outside that would have the same trade effect as the set of NTMs?

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## The analytical framework (2/2)

On supply side: a monopolistic competition of Krugman (1980)

- a profit function with a tariff equivalent raising the cost of inputs by  $(1 + \tau_i)$  as in Chand (2002):
 
$$\pi_i = p_i x_i - c_i x_i - (1 + \tau_i) \left( \sum_{j \neq i} p_j v_j \right)$$
- the first-order condition of profit maximization, assuming a constant marginal cost:
 
$$\frac{\partial \pi_i}{\partial x_i} = p_i - c_i - \tau_i \frac{\partial \left( \sum_{j \neq i} p_j v_j \right)}{\partial x_i} = 0$$

$$-c_i - \tau_i \frac{\partial \left( \sum_{j \neq i} p_j v_j \right)}{\partial x_i} = 0$$

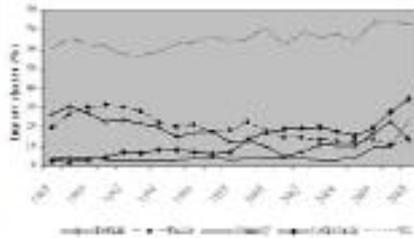
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Data description (1/3)

Figure 1. Import shares of green beans from Kenya in imports of green beans in selected EU countries between 1988 and 2008 (Eurostat)

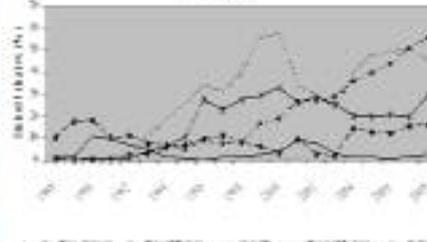


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Data description (2/3)

Figure 2. Import shares of fresh peas from Kenya and Zambia in imports of fresh peas in selected EU countries between 1988 and 2008 (Eurostat)

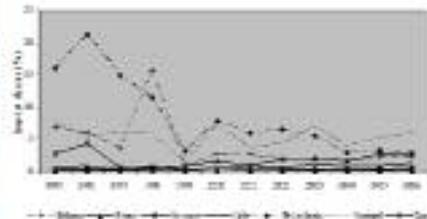


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Data description (3/3)

Figure 3. Import shares of frozen fish fillets from EAC in imports of frozen fish fillets in selected EU countries between 1988 and 2008 (Eurostat)



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Preliminary data analysis

- (1) Unit root tests on panel data of relative quantities  $y_{it} = \ln(\frac{Z_{it}}{Z_{it}^*})$  and real relative prices  $p_{it} = \ln(\frac{P_{it}}{P_{it}^*})$  using the Maddala (1996) and Wu (2004) tests
- Assumption:  $y_{it} = \alpha + \beta p_{it} + \epsilon_{it}$
- Conclusion: - mostly the variables are I(1) or stationary
- (2) Specification of a parsimonious geometric lag model as in Chellaney et al. (2010) using 3 lags of imports: African country, EU-15 and the ROW:  $Z_{it} = \alpha_0 + \alpha_1 Z_{it-1} + \alpha_2 Z_{it-2} + \alpha_3 Z_{it-3} + \epsilon_{it}$
- (3) Find six unobserved effects: Time of Harmonized
- Conclusion: most of the panels are fixed effects, a correlation with the endogeneity bias originates from supply conditions
- (4) and (5) OLS estimation is provided for both short-run and long-run. Asymptotic distribution

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Econometric results (1/5)

Table 3. Estimates of the short-run and long-run Asymptotic distribution of European imports of horticultural and fat products from foreign sources

Product	Import source	Dynamic				Adjusted R <sup>2</sup>	F	DW test
		α	α <sub>1</sub>	α(1-α)	α(1-α)			
Cocoa	Kenya	0.21**	0.26***	0.21**	0.20	0.60	3.11	
	Zambia	0.13	0.17	0.13	0.13	0.48	2.02	
	ROW	0.13	0.17	0.13	0.13	0.48	2.02	
Dairy prod.	Zambia	0.23	0.26***	0.23	0.23	0.55	2.48	
	Zambia	0.23	0.26***	0.23	0.23	0.55	2.48	
	ROW	0.23	0.26***	0.23	0.23	0.55	2.48	
Avocado	Kenya	0.40	0.40***	0.40	0.40	0.45	2.76	
	Zambia	0.40	0.40***	0.40	0.40	0.45	2.76	
	ROW	0.40	0.40***	0.40	0.40	0.45	2.76	
Beef	Zambia	0.31**	0.35***	0.31**	0.31	0.60	3.04	
	Zambia	0.31**	0.35***	0.31**	0.31	0.60	3.04	
	ROW	0.31**	0.35***	0.31**	0.31	0.60	3.04	

UCL: OLS estimator  
 (1) OLS estimator  
 (2) OLS estimator with fixed effects  
 (3) OLS estimator with random effects  
 (4) OLS estimator with fixed effects and random effects  
 (5) OLS estimator with fixed effects and random effects and heteroskedasticity correction  
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Econometric results (2/5)

Table 3. AIC values for the short-run and long-run Asymptotic distribution of European imports of horticultural and fat products from foreign sources

Product and origin	Short-run				Long-run		AIC
	OLS	FE	RE	GLS	OLS	FE	
1988	32	19	31	32	28	-	-
1989	37	24	36	37	33	-	-
1990	37	24	36	37	33	-	-
1991	38	25	37	38	34	-	-
1992	38	25	37	38	34	-	-
1993	38	25	37	38	34	-	-
1994	38	25	37	38	34	-	-
1995	38	25	37	38	34	-	-
1996	38	25	37	38	34	-	-
1997	38	25	37	38	34	-	-
1998	38	25	37	38	34	-	-
1999	38	25	37	38	34	-	-
2000	38	25	37	38	34	-	-
2001	38	25	37	38	34	-	-
2002	38	25	37	38	34	-	-
2003	38	25	37	38	34	-	-
2004	38	25	37	38	34	-	-
2005	38	25	37	38	34	-	-
2006	38	25	37	38	34	-	-
2007	38	25	37	38	34	-	-
2008	38	25	37	38	34	-	-
Total	38	25	37	38	34	-	-

UCL: OLS estimator  
 (1) OLS estimator  
 (2) OLS estimator with fixed effects  
 (3) OLS estimator with random effects  
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 (5) OLS estimator with fixed effects and random effects and heteroskedasticity correction  
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Econometric results (3/5)

$$\text{Tariff equivalent} = \frac{1}{\alpha} \left[ \frac{1 - \alpha}{\alpha} \left( \frac{Z_{it}}{Z_{it}^*} \right)^{\alpha} - \frac{1 - \alpha}{\alpha} \right]$$

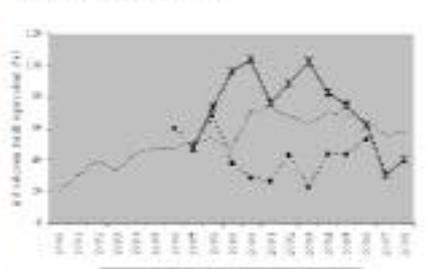
Product Origin	Short-run							
	OLS	FE	RE	GLS	OLS	FE	RE	GLS
1988	1	16	25	8	8	45	12	
1989	1	1700	11	3	12	124	11	
1990	1	21	13	4	13	47	30	
1991	1	1	9	1	26	9	30	
1992	124	127	150	10	23	215	43	
1993	13	156	119	10	13	138		
1994	1	47	13	10	37	46	37	
1995	23	163	29	13	24	20	17	
1996	23	163	29	13	24	20	17	
1997	23	163	29	13	24	20	17	
1998	23	163	29	13	24	20	17	
1999	23	163	29	13	24	20	17	
2000	23	163	29	13	24	20	17	
2001	23	163	29	13	24	20	17	
2002	23	163	29	13	24	20	17	
2003	23	163	29	13	24	20	17	
2004	23	163	29	13	24	20	17	
2005	23	163	29	13	24	20	17	
2006	23	163	29	13	24	20	17	
2007	23	163	29	13	24	20	17	
2008	23	163	29	13	24	20	17	
Total	23	163	29	13	24	20	17	

UCL: OLS estimator  
 (1) OLS estimator  
 (2) OLS estimator with fixed effects  
 (3) OLS estimator with random effects  
 (4) OLS estimator with fixed effects and random effects  
 (5) OLS estimator with fixed effects and random effects and heteroskedasticity correction  
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Econometric estimation (4/5)

Figure 4. Evolution of actual mean values of ad valorem tariff equivalent of NTMs on fish imports

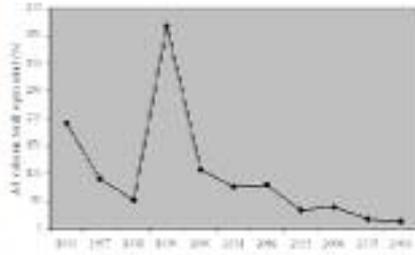


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### Econometric estimation (5/5)

Figure 4: Evolution of actual import values of all value tariff equivalent of NTF on fish imports



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### Concluding remarks

- The NTMs analyzed have a tariffication effect as they show asymmetric compliance costs between African and European suppliers
- Increasing foreign aid to help alleviate compliance costs through capacity building in African countries should stimulate trade of high-value FFV & fish products
- Complete trade liberalization between ACP and EU countries in the framework of the Economic Partnership Agreements (EPA) has to account for also these price-effects from NTF
- Strong differences in tariff equivalent among EU countries despite the single EU market. Hence, bilateral negotiations are more appropriate to deal with these trade issues
- Supply conditions are included in the model in the form of instruments. Data on compliance costs should improve their tariff equivalent
- Trade and welfare effects: gravity equation; positive & negative effects (consumers, producers, in both importing & exporting countries)

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# The Combination of Gravity and Welfare Approaches for Evaluating Non-Tariff Measures

Stéphan Marette (INRA)

## The Combination of Gravity and Welfare Approaches for Evaluating Non-Tariff Measures

*Amer. J. Agr. Econ.* 2010, 92(3): 712-726



Anne-Célia Disdier & Stéphan Marette  
INRA, UMR Economie Publique INRA-AgroParisTech

### Motivations

- NTMs are playing an increasing role in international trade but their effects are ambiguous and politically sensitive:
  - Regulations are often necessary for thwarting market failures
  - But they also may be imposed for protectionist purposes
- Evaluating the impacts of NTMs is not simple and requires theory estimations (Dee & Ferrantino, 2005)
  - To date, many assessments of NTMs have been mercantile focusing on foreign trade via gravity estimation
  - Some papers aim at developing a welfare approach of NTMs but do not account for their trade effect

### What do we do

- We bridge the gap by combining both mercantile & welfare approaches. Analytical approach.
- Empirical application based on seafood products
  - Impact of standards capping residues of chloramphenicol, a toxic antibiotic for human health
  - We evaluate past policies (period 2001-06) & a future policy with an ex ante analysis linked to a stringent standard eliminating all antibiotic residues in seafood
- Results: both trade and welfare effects do not necessarily go in the same direction
  - = NTMs can be trade-restricting but welfare-enhancing

### The gravity approach

$$\ln x_{ij} = \ln \alpha_i + \ln \alpha_j + \beta_1 D_{ij} + \beta_2 cb_{ij} - \beta_3 d_{ij} + \beta_4 col_{ij} + \beta_5 NTM_{ij} - \ln \varepsilon_{ij}$$

- PPML estimator
- Main interest:  $\beta_5$  measures the sensitivity of trade flows to NTMs
- Relative variation of exports in value linked to NTM can be defined as:  $dQ/x = \beta_5 \cdot dNTM$  (everything else being constant)
- Value of exports is:  $x = p \cdot q$  and  $q$  price & quantity of exports
- Relative variation of exports linked to the NTM can be written as:

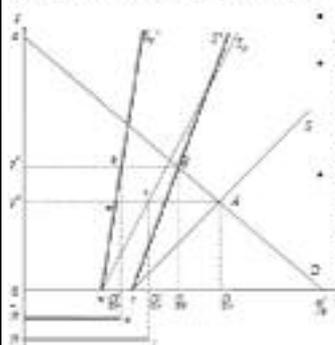
$$\frac{dp}{p} + \frac{dq}{q} = \beta_5 \cdot dNTM \quad (5)$$

- If  $\beta_5$  is statically significant, it can be used for the welfare analysis (effect of the NTM variation isolated from other effects)

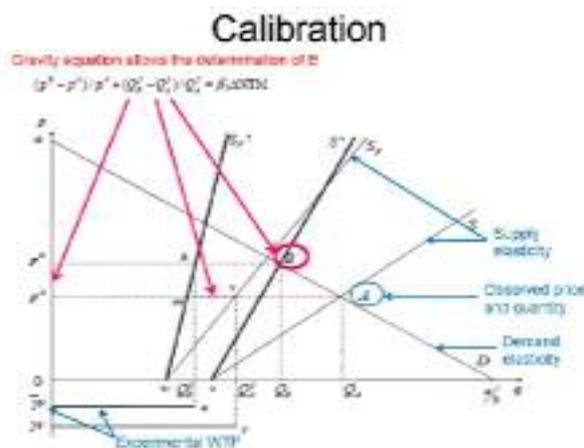
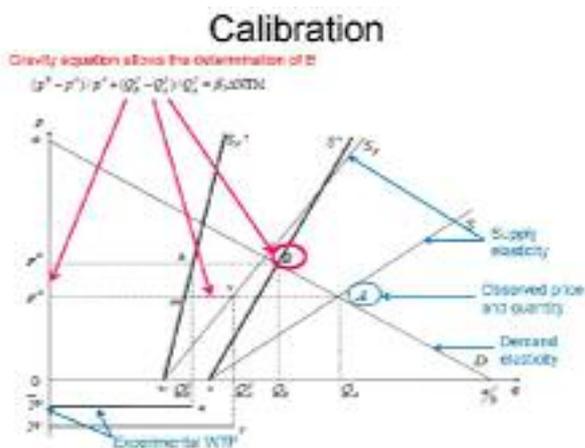
### The welfare approach: assumptions

- Market good is homogeneous except for a given characteristic that is dangerous for consumers and concerned by the standard
- Only foreign producers are concerned by a standard reinforcement selected by the domestic regulator
- The damage is not internalized by consumers
- Supply side: perfectly competitive industry. Domestic & foreign firms
- A stringent standard reduces the entering firms' probability of entering the domestic market (tougher inspections linked to stricter thresholds)

### Welfare approach: market equilibrium under standard reinforcement



- International welfare (with standards): area  $\Delta ABA-Q_2 \times Q_2$
- Effect of a standard: comparison between initial welfare [ $\Delta ABA-Q_1 \times Q_1$ ] and new one [ $\Delta ABA-Q_2 \times Q_2$ ]: ambiguous: depends on the price effect.
- Change in the probability of entering the domestic market for foreign producers could be derived from gravity:
- Focusing on discrete variations, equation (5) can be rewritten as:  $(p^2 - p^1)/p^1 + (Q_2^1 - Q_1^1)/Q_1^1 = \beta_5 \Delta NTM$



### Application: the crustacean example

- Significant increase in production & trade of crustaceans (shrimp)
- Main producer: developing countries. Main importer: OECD countries
- Sanitary problems: producers use a range of pesticides & antibiotics (e.g. chloramphenicol highly toxic for human health)
- Importers adopted SPS measures: focus on chloramphenicol standards
- Gravity law
  - Trade: Comtrade. Bilateral imports of crustaceans: 4 importers: US, CAN, JPN, EU (EU15 taken separately). All exporters. Period: 1995-2006
  - Bilateral distance, common border & language, colonies: CRPI
- NEED: 2 measures:
  - Distance = 1 for importers that strengthen their policy on chloramphenicol from 2001 onward (2001: year where it appeared in border cases)
  - Maximum Residue Limit (in ppb) applied by each importer since 2001. MRLs vary between importing countries and years

### Gravity: results

Year	Q (1000)	Q (1000) - 2001			T
		USA	Canada	Japan	
2001	1.00	0.00	0.00	0.00	0.00
2002	1.10	0.10	0.00	0.00	0.10
2003	1.20	0.20	0.00	0.00	0.20
2004	1.30	0.30	0.00	0.00	0.30
2005	1.40	0.40	0.00	0.00	0.40
2006	1.50	0.50	0.00	0.00	0.50

### Welfare analysis: parameters

- Quantities and prices: UN FAO
- Own-price elasticities of demand & supply: existing literature
- Value of the per-unit damage:  $\tau = 0.767 \cdot p$  (0.767: Lusk et al. (2006): consumers' WTP for avoiding antibiotic)
- Probability of contamination ( $\gamma$ ): Baseline scenario:  $\gamma=1$ . After standard's implementation, various values: 0.75, 0.5, 0.25
- $\beta_2 = 0.13$  (cf. gravity results)

### Welfare: results (1)

Annual international welfare change linked to reduction of the MRL (in ppb) between 2001 and 2006 (*ex post* estimation)  
 (% relative variation compared to the baseline scenario in 2001)

	$\Delta$ MRL (ppb, 2001 → 2006)	$\gamma=0.75$	$\gamma=0.5$
US	$\Delta$ MRL = -4.7 (5 → 0.3)	-12.5%	-12.5%
Canada	$\Delta$ MRL = -2.2 (2.5 → 0.3)	7.2%	13.1%
Japan	$\Delta$ MRL = 0 (50 → 50)	0%	0%
EU	$\Delta$ MRL = -1.2 (1.5 → 0.3)	23.4%	45.3%

### Welfare: results (2)

Relative international welfare change for the year 2006 with a potential MRL equal to zero (*ex ante* estimation)

	$\gamma=0.5$	$\gamma=0.25$
US ( $\Delta$ MRL = -0.3)	15.3%	32.7%
Canada ( $\Delta$ MRL = -0.3)	8.1%	16.5%
Japan ( $\Delta$ MRL = -50)	-52.0%	-52.0%
EU ( $\Delta$ MRL = -0.3)	15%	31.9%

### Foreign producers

- They lose for both configurations
  - See tables in the paper
- The effort is not valued by consumers who are unaware of the damage

## Conclusion

- We studied how gravity models can be used for welfare analysis
- Application: impact of a standard capping chloramphenicol residues in chickens
- Both trade & welfare effects do not necessarily go in the same direction
- This approach:
  - helps assess the impacts of ex ante regulatory measures
  - may be systematically mobilized for CBA enlightening the decision-makers on the effects of the various public choices

## The Cost of Compliance with SPS Standards for Moroccan Exports: A Case Study

Omar Aloui (Agro Concept)

**Costs of NTMs: Case study of tomatoes export industry**

A value chain approach

Main conclusions of 2004 study

- Our main conclusions were the following:
  - the estimated costs to comply with EUREPGAP for a medium-sized tomato farm were about 8% of the production costs per ha and equivalently 3% of the FOB value of the farm's exports.
  - compliance with multiple standards is the most serious problem, particularly for smaller-scale farmers, leading to higher compliance costs because they cannot economize on scale.
  - for some products and standards, SPS regulations worked as a trade diverting instrument, Moroccan exporters replacing West African exporters (green beans).

Outline

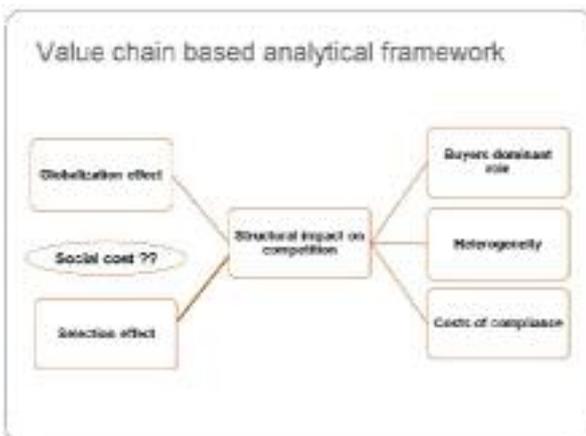
- Background
- Analytical framework based on VC
- Tomatoes market
- Buyers dominant role
- Heterogeneity of producers
- Private costs of NTMs
- Selection effect of NTMs
- Globalization effect of NTMs
- Concluding remarks

Updating the background

- This presentation is an updating of the 2004 study based on :
  - recent advances in the economic literature and in particular in areas developed yesterday such as:
    - fixed and variable costs and industry organization effect,
    - trade embracing effects based on demand shifts)
  - on interviews of key actors in the tomatoes value chain:
    - farm managers,
    - packing house managers,
    - exporters/importers.

Background

- In 2004, the WB launched a study on SPS costs for exporting countries in a traditional framework based exclusively on an tentative measure of supply curve shift.
- With Dr Keeny, we adressed this issue by analysing:
  - the evolution of the value chain (path dependency hypothesis)
  - its current organization (bargaining power of actors)
  - by interviewing farmers on the additional cost of exporting to EU market versus local market or sophisticated export market (Russia).



### Morocco

Period	Market access	Market share	Observations
From 1969 to 1976	Traditional flows with France	Volume but low prices	
1976 to 1990	Reference price	Volume reduction New market with better prices	Marketing standards and public monopoly
1990 to 1995	Quotas	Losses	Private exporters Outsourcing
From 1995	Entry price and tariff erosion Presence of NTMs	Gains	Moroccan leading firms

### Heterogeneity in general

- Following Melitz contribution, recent economic research on trade shows that differences between firms are crucial to understand trade issues.
- This literature (Baldwin) insists on two elements of differentiation between firms linked to trade issues:
  - Heterogeneity with respect to marginal costs
  - Heterogeneity with respect to fixed costs (sunk costs and overhead costs)

### Relevant NTMs in tomatoes trade

- TRQs: preferential minimum price, calendar
- SPS : LMRs, positive and negative list
- TBT: labels, packaging, traceability
- Standards: Globalgap, BRC, Nature Choice
- IPRs: seeds, IPM

Level of integration	Share of exports	Comments
Full integration from farm to packing	40 to 50%	Increasing with instability
Integration with external suppliers	25 to 40%	Variable share
Non integrated producers	> to 10%	Declining

Based on Chemnitz and Geste 2003

### Buyers dominant role

- In the value chain literature, agro-food is typically a buyer driven sector. These chains are typical for labour-intensive industries.
- In the buyer-driven value chains, large buyers with core competencies in branding and marketing are the driving actors in setting up these value chains. They increasingly organize, coordinate and control the production, designing and marketing activities.
- A prime example is the EUREP-GAP protocols, designed by a group of European food retailers, primarily with food safety in mind but with some reference to social and environmental issues.
- Competitive advantage relies upon costs efficiency (self service, favorable terms from suppliers, etc) and

### Costs of compliance: an recent example

- Exporter description:
  - Packing house (40 000T)
  - 20 farms (200 ha under greenhouses)
  - joint venture with a brand on French market
  - supplier of Lidl in Germany
  - Globalgap in farms
  - BRC and Nature choice in packing house
- Costs estimates: additional costs compared to local market

- In the tomatoes sector , this dominant role is the basic reason for the expansion of private standards sur as BRC or Globalgap that are more stringent than mandatory SPS or TBT measures.
- This role appears also through their share in Moroccan exports share with the direct links of some suppliers with Tesco, Lidl or Carrefour (référencement).

### Costs decomposition

	Total PER YEAR 000 Euros	per ton Euros/ton
Sunk costs	20	0,5
Overhead costs	200	5
Total fixed costs	220	5,5
Variable costs	28	0,7
Total CC	248	6,2
% border prices		
cherries tomatoes		0,58%
round tomatoes		1,55%

### Costs of compliance: comments

- Probably, due to scale economies unit costs have been reduced from 2004 to 2010.
- The bulk of CC are fixed costs, circa 90% of total CC
- This explains partially the integration cum concentration process in this industry.
- It drives also the innovation appetite of Moroccan exporters

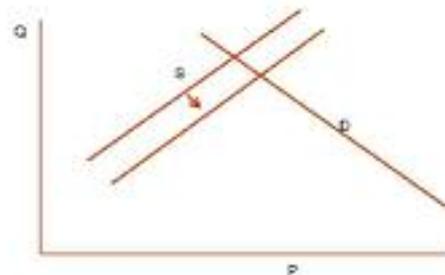
### Concluding remarks on social costs

- The high requirements for entering buyer-driven chains mean that the higher land and labour efficiency of smallholder production is no longer a comparative advantage. The connection between agriculture and poverty alleviation is thereby weakened.
- An associated risk is a polarisation between agribusiness and small-scale farming systems. Agriculture will not deliver the expected development benefits when agrifood markets do not function competitively.

### Selection effect: General argument

- The ability of buyers to impose product and process standards exclude certain classes of producers from supply chains.
- Poorly resourced producers face diseconomies of scale and market exclusion, as new forms of private sector governance, including certification, become prerequisites for inclusion in supply chains.
- Private standards can bring producers considerable benefits, such as reduced agrochemical use and a framework that guides agricultural and management practice. Conforming to high standards for one retailer opens up new markets for growers, other high-end supermarkets without their own standards will look favorably on suppliers that comply with other retailers' standards. In this sense, standards may drive improvements in competitiveness.

### NTMs in TTT



### Selection effect in our case

- According to the most recent studies (C. Chemnitz in 2005), there are more or less 12 exporters groups of which the largest three around 70% of total exports.
- Two of these three have been created as joint ventures between EU producers (Duran and Azura) and Moroccan businessmen with no links to the sector.
- Once in Morocco, both EU investors have more or less rapidly abandoned their EU facilities.

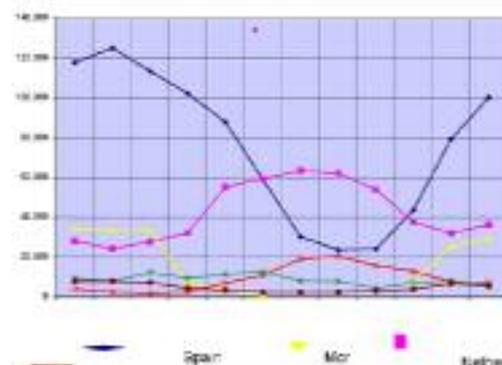
### Moroccan exports : Long term trend

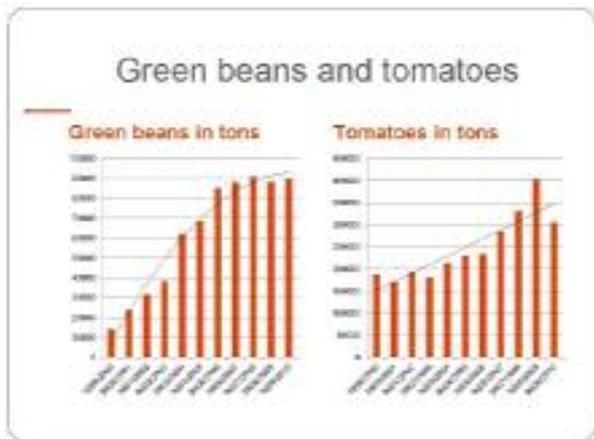
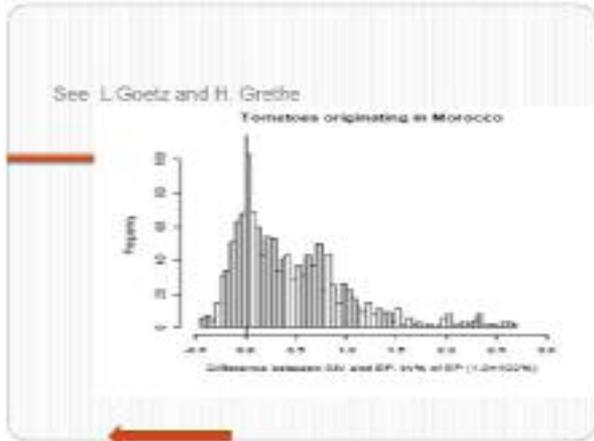


### Globalization effect

- The general argument of outsourcing can be transposed to the sector (standards, technologies, etc)
- The number of sources is increasing to all Mediterranean countries.
- Moroccan exporters are looking for opportunities in West Africa.

### Seasonality by origin





Country/Region	Value	Year
Green Beans (EU/EP)	91 120 - 12 720	2000
Green Beans (EU/EP)	20 000 - 25 000	2001
Green Beans (EU/EP)	30 000 - 35 000	2002
Green Beans (EU/EP)	40 000 - 45 000	2003
Green Beans (EU/EP)	50 000 - 55 000	2004
Green Beans (EU/EP)	60 000 - 65 000	2005
Green Beans (EU/EP)	70 000 - 75 000	2006
Green Beans (EU/EP)	80 000 - 85 000	2007
Green Beans (EU/EP)	90 000 - 95 000	2008
Green Beans (EU/EP)	10 000 - 15 000	2009
Green Beans (EU/EP)	15 000 - 20 000	2010
Tomatoes (EU/EP)	10 000 - 15 000	2000
Tomatoes (EU/EP)	15 000 - 20 000	2001
Tomatoes (EU/EP)	20 000 - 25 000	2002
Tomatoes (EU/EP)	25 000 - 30 000	2003
Tomatoes (EU/EP)	30 000 - 35 000	2004
Tomatoes (EU/EP)	35 000 - 40 000	2005
Tomatoes (EU/EP)	40 000 - 45 000	2006
Tomatoes (EU/EP)	45 000 - 50 000	2007
Tomatoes (EU/EP)	50 000 - 55 000	2008
Tomatoes (EU/EP)	55 000 - 60 000	2009
Tomatoes (EU/EP)	60 000 - 65 000	2010

## Estimating Trade Restrictiveness Indices

### Alessandro Nicita (UNCTAD)

**Estimating  
Trade Restrictiveness Indices**

Hiau Looi Kee  
Alessandro Nicita  
Marcelo Citarreaga

Economic Journal Royal Economic Society, vol. 114(534), pages 173-184, 2004.

**Overall Trade Restrictiveness Index (OTRI)**

**Links to economic theory:**  
Anderson and Neary (Econometrica 1992, or IER 2003)  
Import-volume equivalent index

- Momentlet TRI
  - What is the equivalent uniform tariff that would keep aggregate imports at their observed levels?

**Comprehensive of different trade policies:**

- Tariffs
- Quotas
- Subsidies
- Other NTMs

**Useful to assess own trade policies and trade partners trade policies**

- OTRI (also bilateral)
- Market Access OTRI (MA-OTRI) (also bilateral)

**Motivation:**

Motivation: to provide the basis for a trade policy indicator that is:

- Based on economic theory
- Comprehensive
- Meaningful and useful

Need of an indicator that is useful for:

- Summarizing the overall effect of trade policy (country comparison)
- Analyzing overall impact of trade reforms (time comparison)
- Exploring Bilateral restrictions (OECD - Middle income - LDC)
- Sector analysis (relative protection, AG - MF, textiles - apparel)

...but there are many indicators already! Is there the need for another one?

**Definitions: OTRI and MA-OTRI**

**OTRI measures OWN trade policy:**  
is the equivalent uniform tariff that keeps aggregate imports at their observed level given by the existing tariff and NTM structure.

**MA-OTRI measures PARTNERS trade policy:**  
is the equivalent uniform tariff that keeps aggregate exports at their observed level given by the existing tariff and NTM structure of all trading partners.

**Indicators of Trade Policies**

a) **Simple measures:**  
Focus on only on one measure (Tariff or NTM) and assume that all other instruments are correlated.

- Average Tariff
- Frequency and Coverage Rates of NTM

b) **More elaborated measures:**  
Focus on outcomes, difficult to disentangle the effect of trade policies.

- Trade/GDP
- Price Gap

c) **Comprehensive measure**  
Standardize the effects of various policies to a common system, index = weighted sum.

- IMF's TRI: inventory approach (policies), arbitrary weights
- OTRI: convert measures to a common metric (AVE), theory based weights.

**Estimating restrictiveness indices: Two classic problems:**

**1) Trade policy takes many different forms**

- How can one aggregate tariffs, quotas, agricultural subsidies, etc...?

**2) Trade policy is determined at the tariff line level**

- How can one summarize >5000 different tariffs in one aggregate measure?

### Ad-Valorem Equivalent of NTM

**Two groups of NTM:**

- Core NTM (quantity, price, monopolistic) + Technical Regulations
- Domestic subsidies

**AVE Estimation: two steps:**

- 1) Estimation the quantity impact of NTM on imports (Laimer JDE 1990; Harrigan JDE 1993; Trefler JPE 1993)
- 2) Convert the import-quantity impact into price or tariff equivalents using import demand elasticities (Kee, Nicita and Olarreaga, RSTAT forthcoming)

### OTRI: Aggregation across tariff lines

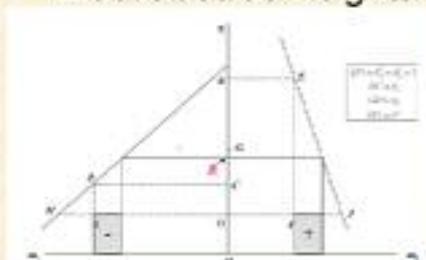
- *OTRI: What is the uniform tariff that if imposed on home imports instead of the existing structure of protection (tariff + NTM) would leave aggregate imports at their current level?*
- A&N application CGE model
- Simplification: Partial equilibrium. Feenstra (1995 Handbook)
  - OTRI is a weighted-average of (tariff + AVE of NTM) at the tariff line level. Weights are a function of:
    - Import shares
    - Import demand elasticities

### Key component of OTRI is the AVE of Non Tariff Measures

**Non Tariff Measures Data**

- CORE NTB + TECHNICAL REGULATIONS  
Price control measures, quantity restrictions, monopolistic measures, technical regulations.
- DOMESTIC SUPPORT  
From WTO members notifications

### Elasticities as weights



C = Tariff good 1, D = Tariff good 2, G = Import weighted Tariff

R = OTRI: uniform tariff that keeps value of import constant  
Intuition: good 1 more elastic (flatter) to keep imports constant weights more

### Estimating the AVEs of NTMs

Predict imports using factor endowments and observe its deviations when NTM are present.

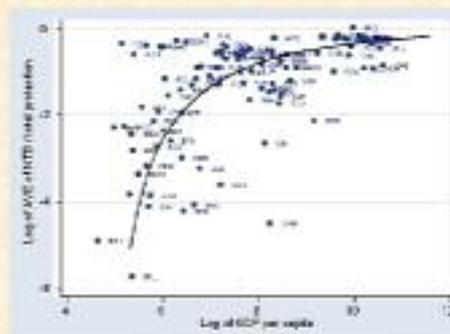
- Setup: Import values depend on tariffs, NTM and factor endowments (land, capital, labor / GDPs)
- Estimation: Tariff line level, IV to control for endogeneity of NTM to imports, ML estimation to restrict betas > 0

$$\log(m_{it}) - \alpha_{it} \log(1 - t_{it}) = \alpha_{it} + \sum_k \alpha_k C_k^i - \beta_{it}^{core} Core_{it} - \beta_{it}^{DS} \log DS_{it} + \epsilon_{it}$$

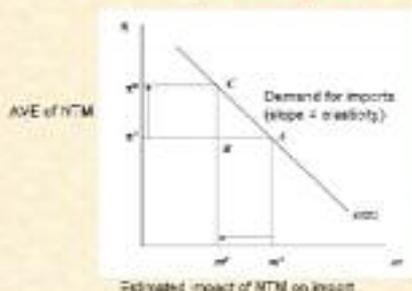
To capture differences in AVE across countries, interaction terms between NTM and factor endowments.

$$\beta_{it}^{core} = \beta_{it}^{core} + \sum_k \beta_k^{core,NTM} C_k^i$$

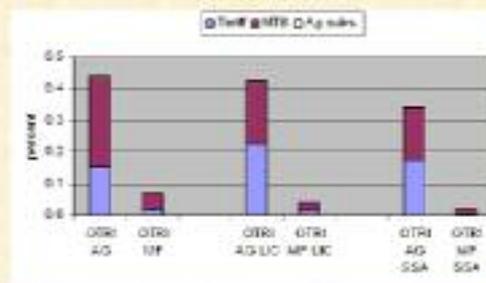
### Instruments for protection: Non-tariff measures matter more in middle and high income countries



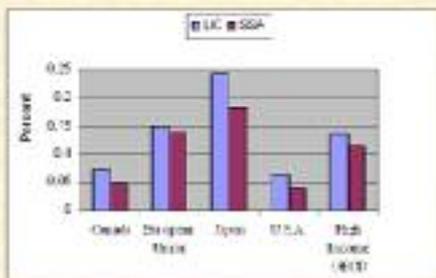
### AVE of NTM: From quantity impacts to price impacts



### High income OECD OTRIs for Agriculture (Ag) and Manufacturing (MF): All trade, on LIC and SSA



OTRI vis a vis LIC and Sub Saharan Africa



Summary

- Indices based on economic theory
- Comprehensive of NTM (or not)
- Transparent, not arbitrary
- NTM are as important as Tariffs
- Countries with higher tariffs face higher protection (important for reciprocity).

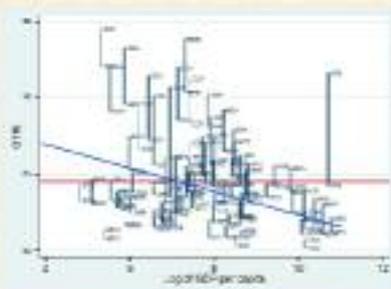
Tariffs and NTM complement or substitutes?

	To (1 - $\alpha$ ) <sup>NTM</sup>		
To (1 - $\alpha$ ) <sup>AVE of Core NTMs</sup>	0.001***	0.021***	-0.002***
	(0.001)	(0.001)	(0.001)
To (1 - $\alpha$ ) <sup>AVE of Ag. Measures</sup>	0.119***	0.029**	0.002***
	(0.005)	(0.011)	(0.001)
Constant	0.361***	0.012**	0.142***
	(0.001)	(0.001)	(0.001)
Product dummies	Yes	No	Yes
Country dummies	No	Yes	Yes
R <sup>2</sup> adjusted	0.274	0.121	0.436
Observations	42712	42712	42712

- Products with higher tariffs tend to have more restrictive NTM.
- Countries with higher tariffs tend to have more restrictive NTM.
- ... but negative correlation with country and product fix effect - within country they are substitutes

- Additional Slides

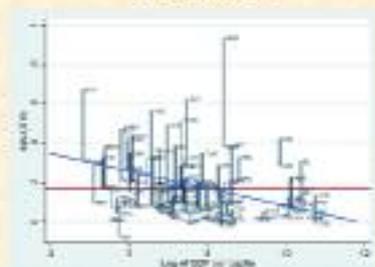
OTRI higher for low income countries



Import Demand Elasticities

- The production based GDP function approach (Kohli (1991) and Harrigan (1997)).
- Imports and exports are inputs and outputs of the domestic production, given exogenous world prices, productivity and endowments.
- Close links to trade theories -- general equilibrium effects of the reallocation of resources as prices or endowments change
- Kohli – aggregate level, Harrigan – industry level; We estimate at the tariff line level (HS 6 digit)

MA-OTRI higher for low income countries



Results

Import Demand Elasticities: 117 Countries

- Very precisely estimated
- Larger for homogenous goods (i.e., larger for metal than machinery)
- Smaller as we aggregate the level at which we estimate them
- Larger in large and poor countries

AVEs of NTMs: 94 Countries

- Average increases with GDP per capita
- Contribution to overall level of protection increases with GDP per capita
- When present they are more restrictive than tariffs
  - in 77 percent of tariff lines where core NTMs are present
  - in 45 percent of tariff lines where agricultural domestic support is present

OTRI: 94 Countries

### Endogeneity of NTB

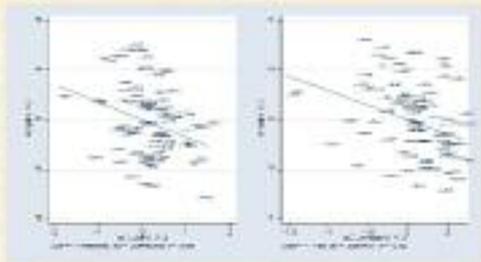
NTB may be imposed on highly imported goods

- For the binary NTB (Core NTB) – treatment effects of Heckman
- For the continuous NTBs (Agricultural Domestic Support) – instrumental variables approach
- Instruments used – exports, the past change in imports, GDP-weighted share of the coverage rate of the same type of NTB of the 5 closest countries

### References

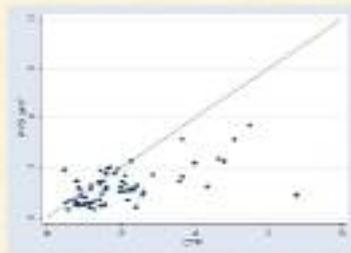
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Rich countries impose lower barriers on their imports and face lower barriers on their exports

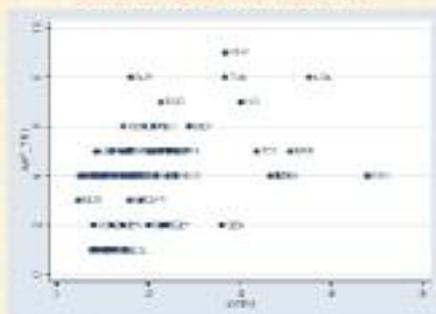


### How OTRI compares?

	IMF TRI	AVQ Index	Freeman Index OTRI	
IMF TRI	1.00			
AVQ Index	0.94	1.00		
Freeman Index	0.98	0.92	1.00	
OTRI	0.41	0.62	0.81	1.00



### OTRI and IMF's TRI



## Non-Tariff Measures/Barriers in CGE Models

Alessandro Nicita (UNCTAD)

### Non-Tariff Measures/Barriers in CGE Models

*Based on*

Fugazza, Marco and Maur, Jean-Christophe, 2008. "Non-tariff barriers in CGE models: How useful for policy?," *Journal of Policy Modeling*, vol. 30(3), pages 475-490.

### 2. Existing Results

- Existing estimates of the effects of the removal of NTMs indicate that potential welfare gains are quite substantial (USITC staff papers 2003, 2004) and quite above those obtained from tariff reductions (Hertel, Walmsley and Itakura (2001), Bradford (2003))
- The size of the gains are likely to depend on the way ad valorem equivalents are introduced
- Issues related to the use of AVE instead of explicit model representation (Whalley, 2005)

### 1. Motivations

- "Next" on the liberalisation agenda: NTMs
- However policy is proceeding with little economic analysis: estimates of the economic effects of trade agreements are dominated by estimates of the effects of tariff reduction
- The paper contributes to fill up this "analysis gap" (Ferrantino 2003) -global assessment-

### 3. Methodological Issues

- Economic effects of NTMs (Roberts and al., 1999)
  - Protection/regulation effects: Core and Non-Core
  - Supply Shift: Non-Core (SPS)
  - Demand Shift: Non-Core (Technical Regulations)
- The protection effect of NTBs is the "easy" candidate for assessment in CGE models provided that the right impact estimates are available
- The other two effects could also be dealt with but may be cumbersome (Ganslandt and Markusen 2001)

### WARNING

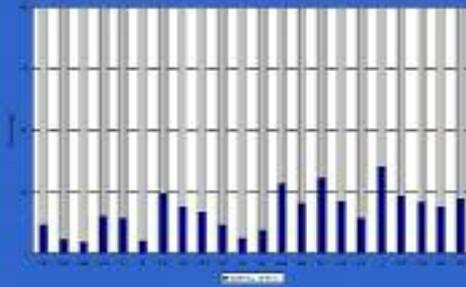
- Results must be interpreted with caution
- Any policy conclusion would be hazardous
- The main scope of the paper is methodological

### 3. Methodological Issues

- Shift in Demand for Imports
  - ⇒ Tariff Equivalent (e.g. CV, AD, Quotas, Prohibitive) **NTM**
- Shift in Supply of Exports
  - ⇒ Export Tax Equivalent (e.g. VER, VERG, **OTM**)
  - ⇒ Import Enhancing Technological Shock (e.g. Technical Measures, Non-Automatic Licensing) **NTM**
- Although straightforward at first sight, the analysis may become problematic in the presence of multiple NTMs with different distortive effects (likely to occur in CGE frameworks)

### 3. Methodological Issues

Ratio of 2002 versus 2001-2007 NTMs by GTAP sector



### 5. Discussion

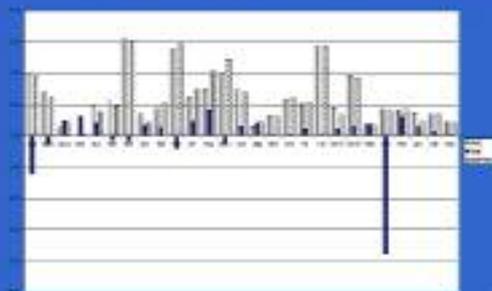
- Further modeling efforts are needed
- Further work on data collection and quantification is necessary and will certainly contribute to increase the accuracy of "mass-production" estimates
- Data work and CGE modeling should be jointly undertaken
- Investigate ways to include demand-shift effects: immediate possibility would be to shock elasticities, but then again we need estimates!

### 4. Experiments and Results

- Illustration using AVEs of NTMs (quotas + technical regulations) computed at HS6 level (more than 4000 products) by Kee, Nicita and Olarreaga (2005) for 104 countries
- Fairly disaggregated version of GTAP 6 database: 26-country\*27-sector
- Choice of shock variable based on frequency + sensitivity analysis (all\_tms versus all\_ams)
- Scenario: complete "removal" of NTMs (i.e. welfare cost of imposition of NTMs)

### 4. Experiments and Results

Equivalent variation (as % of GDP) of a complete removal of NTMs at the border



### 5. Discussion

- Differences in results cast some doubts on the appropriateness of using *ams*
- Good for "sand" not for "rocks": more adequate for assessing true trade facilitation elements (although with caution)
- NTMs and in particular *Technical Regulations* can affect both variable and fixed costs of firms
- The fixed cost component can not be dealt with in standard GTAP model and may not be straightforwardly dealt with in the standard imperfect competition version

## Trade effect of non-tariff measures on European horticultural and fish imports from African countries

Nicodeme Nimenya (Université Catholique de Louvain la Neuve)



**Trade effect of non-tariff measures on European horticultural and fish imports from African countries**

Monsieur Nimenya  
 Department of Agricultural Economics  
 Université catholique de Louvain (UCL)  
 Louvain-la-Neuve, Belgium

Workshop on Non-tariff measures affecting agro-food trade between the EU and Africa  
 Sevilla, 9-10 September 2010  
 European Commission, Joint Research Centre  
 Institute for Prospective Technological Studies (IPTS)  
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Workshop on NTMs in EU-Africa agricultural trade, 9-10 September 2010, IPTS, Sevilla (Spain)



*"Europe is by far the most significant trading partner for Southern Africa... this means that decisions made in Brussels transform lives in the region, controlling whether factories close and jobs are lost, whether farmers grow maize or rice, families can earn enough to send their children to school" (ACTSA, 2001).*

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**Outline**

1. Introduction
2. The gravity model
  - 2.1. The model specification
  - 2.2. The econometric model
3. Data description
4. Econometric results and discussion
5. Concluding remarks

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**Introduction**

Context:

- EU's GSP, ACP-EU partnership & EBA for LDCs
- Trade liberalization (GATT & WTO)
- Upward trend of NTMs notifications to TBT & SPS agreements (human health & environmental concerns)

Objectives:

- To assess the role of NTMs on trade between EU & Africa
- To determine the additional effect of the EU ban on fish imports and KLAS

Research questions:

(a) Trade effects: an empirical question to investigate

- Considerable losses for DCs (Nguyen *et al.*, 1988; Otsuki *et al.*, 2004; Osherson *et al.*, 2007; Dodier *et al.*, 2008)

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**Introduction**

- No trade effects (Lee & Swigel, 1997; Nang & Beghin, 2010; Wilson & Ery, 2010; Harigan, 1993); Head and Mayer (2009) and Chen (2008), negative effects on fresh & processed food but insignificant and even positive effects on manufactured products (Portugal, Missouri and Pestaki, 2005; Moeris, 2004, 2006)

(i) Relevant issues for NTMs in gravity equation:

- levels of food safety standards (Otsuki *et al.*, 2008; Osherson *et al.*, 2007)
- standards (Anderson & Chinnell, 2009; Chaves-Lopez *et al.*, 2005; Nguyen & Wilson, 2009)
- data from inventory based approach: (Nardella & Braccetti, 2004; Mehin *et al.*, 2005; Dodier *et al.*, 2008)
- AVE of NTMs: Dodier *et al.*, 2008)

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**The gravity model: (a) the model specification**

- Anderson & van Wincoop (2004): CES expenditure system; central trade; allocation of trade across countries separable from allocation of production; & consumption within countries

$$X_{ij}^* = \frac{Y_i^* \alpha_j}{Y_i^* + \sum_{k \neq i} Y_k^*} \left( \frac{Y_j^*}{Y_j^* + \sum_{l \neq j} Y_l^*} \right)^{\frac{1}{1-\sigma}}$$

$$\ln X_{ij}^* = \frac{1}{1-\sigma} \left( \frac{Y_j^*}{Y_j^* + \sum_{l \neq j} Y_l^*} \right)^{\frac{1}{1-\sigma}}$$

$$\ln X_{ij}^* = \frac{1}{1-\sigma} \left( \frac{Y_j^*}{Y_j^* + \sum_{l \neq j} Y_l^*} \right)^{\frac{1}{1-\sigma}}$$

- Following Head & Ries (2001) for tariff & NTMs and Hummels (2001) and Parsy (2005) for functional form:

$$\ln X_{ij}^* = \alpha + \beta_1 \ln Y_i^* + \beta_2 \ln Y_j^* + \beta_3 \ln \tau_{ij} + \beta_4 \ln \tau_{ij}^* + \beta_5 \ln \tau_{ij}^{**}$$

$$\ln X_{ij}^* = \alpha + \beta_1 \ln Y_i^* + \beta_2 \ln Y_j^* + \beta_3 \ln \tau_{ij} + \beta_4 \ln \tau_{ij}^* + \beta_5 \ln \tau_{ij}^{**}$$

$$\ln X_{ij}^* = \alpha + \beta_1 \ln Y_i^* + \beta_2 \ln Y_j^* + \beta_3 \ln \tau_{ij} + \beta_4 \ln \tau_{ij}^* + \beta_5 \ln \tau_{ij}^{**}$$

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The gravity model: (b) the econometric model

How to deal with the unobservable multilateral trade resistance?

- (1) use of consumer prices in the trading countries (Haar & Bergstrand, 2003; Fontagné et al., 2005)
- (2) use of country-specific effects (Rose and van Wincoop, 2001; Hummels, 2001; Fontagné, 2002; Pindy (2005) and Dédieu et al., 2008)
- (3) the combination of consumer prices and country-specific effects (Findling et al., 2008)

Unitary elasticities of output and expenditure

Restrict to a more unrestricted model (Fisher uses as in Hery de Fraix & Vincenzoni, 2006)

Distance versus of various freight costs (Hörig, 1992; Haar & Bergstrand, 2001; Head & Ries, 2001; Hummels (2001); Anderson & van Wincoop (2004).

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Table 3 - Gravity estimates from panel data estimation on European imports of Fresh Fish Fillets from East African Community (1999-2006)

Variable	Econometric model (specification 7)		Econometric model (specification 8)	
	Coefficient	p-value	Coefficient	p-value
Ln(expenditure $Y_j^*$ )	0.20*	0.000		
Ln( $Y_i + AY_i^*$ )	0.31***	0.000	0.31***	0.000
Ln $Z_{ij}$	0.02	0.679	0.02	0.700
Constant	0.809	0.773	0.81**	0.001
R <sup>2</sup>	0.12*	0.020	0.13	0.007
Ln( $\beta_1^2 \beta_2^2$ )	0.25	0.094	0.25	0.020
Constant	-1.70	0.001	-1.68**	0.007
Number of observations	77		77	
Adjusted R-squared	0.08		0.08	
Specification tests				
- F-test: $H_0: \alpha = 0$			$\chi^2(1) = 8.8***$	

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Data description

- Panel data on imports of green beans in Belgium-Luxembourg, France, Germany, Netherlands and the UK from Kenya (1999-2006). Source (Eurostat)
- Panel data on imports of frozen fish fillets in Belgium, France, Germany, Italy, Netherlands, Portugal & Spain from EAC (Kenya, Tanzania & Uganda): 1996 - 2006. Source (Eurostat)
- Production: FAO Comod & Eurostat (Eurostat) for EU countries and FAO/STAT for African countries
- Expenditure on consumption: domestic production - imports - exports
- Ad valorem tariff equivalent of NTMs (BRC & OkibaGAP methods) Nantaya et al. (2002)
- Geographic distance between economic centres of trading countries <http://www.cepii.fr>
- Freight costs = c.i.f. prices - f.o.b. prices
- RTAs: COMESA & EAC dichotomous variables

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Table 4 - Interaction between ad valorem TE and importing country effects on imports of Fresh Fish Fillets in selected EU countries from EAC

Variable	Coefficient	t-statistic	p-value
Ln Expenditure $Y_j^*$	0.14	4.21	0.000
Ln expenditure $Y_j^*$	-0.11	-3.28	0.001
Ln commodity $Y_j^*$	-0.06	-4.71	0.000
Ln $Z_{ij}$	0.03***	2.27	0.027
Constant	0.30	0.81	0.419
Ln( $\beta_1^2 \beta_2^2$ )	0.02*	1.73	0.089
Ln( $Y_i + AY_i^*$ ) $\gamma^{Belgium-Lux}$	1.08**	2.63	0.010
Ln( $Y_i + AY_i^*$ ) $\gamma^{France}$	-2.04***	-6.33	0.000
Ln( $Y_i + AY_i^*$ ) $\gamma^{Germany}$	-1.03***	-3.23	0.002
Ln( $Y_i + AY_i^*$ ) $\gamma^{Italy}$	-0.02	-0.03	0.307
Ln( $Y_i + AY_i^*$ ) $\gamma^{Netherlands}$	0.27*	2.06	0.040
Ln( $Y_i + AY_i^*$ ) $\gamma^{Portugal}$	-2.08***	-3.28	0.002
Ln( $Y_i + AY_i^*$ ) $\gamma^{Spain}$	0.23	0.78	0.432
EA21*Spain-Luxembourg	-0.50	-4.21	0.000
EA21*France	-1.24***	-3.48	0.001
EA21*Germany	-0.14	-4.20	0.000
EA21*Italy	-0.38	-6.20	0.000
EA21*Netherlands	-0.03	-4.23	0.000
EA21*Portugal	-0.11	-4.25	0.000
EA21*Spain	-1.46**	-4.59	0.000
Constant	-22.35	-4.44	0.000
Number of observations	77		
Adjusted R-squared	0.48		
Global F-test	F(20,56) = 2.36***		

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Table 1 - Gravity estimates from panel data estimation on European imports of green beans from Kenya (1999-2006)

Variable	Econometric model (specification 7)		Econometric model (specification 8)	
	Coefficient	p-value	Coefficient	p-value
Ln(expenditure $Y_j^*$ )	0.21***	0.000		
Ln( $Y_i + AY_i^*$ )	0.31***	0.000	0.31***	0.000
Constant	0.81	0.773	0.81**	0.001
R <sup>2</sup>	0.12*	0.020	0.13	0.007
Ln( $\beta_1^2 \beta_2^2$ )	0.25	0.094	0.25	0.020
Constant	-1.70	0.001	-1.68**	0.007
Number of observations	77		77	
Adjusted R-squared	0.08		0.08	
Specification tests				
- F-test: $H_0: \alpha = 0$			$\chi^2(1) = 8.8***$	

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Concluding remarks

- This study contributes an additional empirical evidence that entry elasticities of output and expenditure on consumption are not appropriate
- NTMs have to be taken into account, along with tariff barriers, in the bilateral trade negotiations like EU & ACP at the era of Economic Partnership Agreements (EPA) with Japan-South Korea
- Contrasting results between the two commodities considered, no trade effects on green beans and negative impact on trade of frozen fish fillets (2 possible explanations for this situation):
  - what are the origins of differences in trade effects of NTMs among EU countries? Public pressure on private certification?
  - priorities for establishing projects to entrust to the Standard and Trade Development Facility (STDF)

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Table 2 - Interaction between ad valorem tariff equivalents and importing country fixed effects

Variable	Coefficient	t-statistic	p-value
Ln expenditure $Y_j^*$	0.48	0.80	0.422
Ln( $Y_i + AY_i^*$ )	1.36***	4.78	0.000
Constant	0.66	0.12	0.920
R <sup>2</sup>	0.31**	2.40	0.013
$\beta_1^2 \beta_2^2$	0.27	1.86	0.065
Importing country effects			
Belgium-Luxembourg	1.23***	2.83	0.005
France	0.13	0.70	0.483
Germany	0.13***	3.24	0.001
Netherlands	-0.60***	-4.91	0.000
Importing country effects* ad valorem tariff equivalent			
EA21*Spain-Luxembourg	0.26**	2.28	0.022
EA21*France	-0.23***	-3.08	0.002
EA21*Germany	-0.14	-0.22	0.824
EA21*Netherlands	0.03***	0.04	0.963
EA21*Spain	0.02	0.03	0.980
Constant	0.21***	0.03	0.000
Number of observations	77		
Adjusted R-squared	0.38		
Global F-test	F(14,59) = 10.21***		

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## Obstacles to agricultural trade between Africa-EU: which are the main determinants for the exporters?

Aida Gonzalez Mellado (JRC-IPTS)

<p> </p> <p><b>Obstacles to agricultural trade between Africa-EU which are the main determinants for the exporters?</b></p> <p>Aida Gonzalez Mellado</p> <p>IPTS – Institute for Prospective Technological Studies Agriculture and Life Sciences in the Economy Unit, Seville, Spain</p>	<p> <b>Exporter survey</b> </p> <ul style="list-style-type: none"><li>• Representative panel for competitive African export commodities from different regions</li><li>• Five countries: Ivory Coast, Kenya, Morocco, South Africa and Uganda</li><li>• Aprox. 20 exporters by country</li><li>• Country-specific export products</li></ul>
<p> <b>Motivation</b> </p> <ul style="list-style-type: none"><li>• The importance of trade relations Africa-EU</li><li>• In spite of several trade agreements exports from African products have not increased as expected</li><li>• Are there some obstacles to trade restrict flows between Africa and the EU?</li><li>• Project:</li><li>• Therefore this project focuses on identification of obstacles their patterns and effects on trade flows</li><li>• This presentation:</li><li>• Do African exporters perceive African assistance as obstacle to trade when entering to the EU?</li></ul>	<p> </p> <p>Evaluation of African assistance for exports as obstacle to trade</p>
<p> <b>Outline</b> </p> <ul style="list-style-type: none"><li>• Exporter survey</li><li>• Model Specification</li><li>• Results</li><li>• Unanswered questions</li></ul>	<p> <b>Export promotion in Africa</b> </p> <ul style="list-style-type: none"><li>• National governments tend to play the major role in export promotion</li><li>• Governments in some of the countries studied support their exporters in different ways<ul style="list-style-type: none"><li>– Ivory Coast: support to promote non-cocoa exports (fiscal and administrative support)</li><li>– Uganda and Kenya and Morocco: VAT exemptions, export insurance and credits, and control of foreign exchange rate</li><li>– South Africa: direct export subsidy applied on a non-discriminatory basis to exporters as well as export incentive schemes</li></ul></li><li>• How do the exporters perceive African assistance?</li></ul>

**JRC** **Statistics of Answers** *ijs*

Number of Answers by Country	East Coast	Kenya	Morocco	South Africa	Uganda	Total
<b>Absent obstacles/obstacles</b>						
Very positive	4	3	3	0	0	10
Positive	0	1	4	1	0	6
Zero	5	10	7	0	14	36
Negative	2	0	1	2	1	6
Very negative	0	0	1	0	0	1

**JRC** **Econometric estimation** *ijs*

## Another econometric approach

**JRC** **Econometric estimation** *ijs*

**Equation 1: Ordered probit model**

$$OT_{it}^* = \alpha_0 + \sum \alpha_i C_{it} + \sum \beta_j COM_{it} + \sum \gamma_k EXP_{it} + \epsilon_{it}$$

Where:

- $OT_{it}^*$  represents the latent exporters' perception to African assistance when exporting to EU
- $C_{it}, COM_{it}, EXP_{it}$  are country, commodity and export characteristics
- $\alpha_0, \alpha_1, \beta_1, \gamma_1$  are coefficients estimated for country, commodity and export characteristics

**JRC** **Econometric estimation** *ijs*

- Gravity estimation
  - Explain trade flows based on tariff and non tariff obstacles
  - Explain exporters revenues based on commodity characteristics, export country characteristics, tariff and non tariff obstacles

↓

Obtain tariff equivalents for the obstacles to trade

**JRC** **Ordered probit model** *ijs*

### Export and country characteristics

Explanatory variables	African Assistance
Transport 1 (no technical work)	-1.80**
Transport 2 (technical work)	0.34
FOB price (index price)	0.02**
Packing 1 (with additional services)	-0.07
Packing 2 (with additional services)	0.12
Share of exports to EU market	0.36
South Africa	-0.03**
Number of observations	41

**JRC** **Gravity model** *ijs*

**Equation 2:**

$$\ln x_{it} = \alpha_0 + \sum \alpha_i C_{it} + \sum \beta_j PROD_{it} + \sum \gamma_k OT_{it} + \mu_{it}$$

Where:

- $x_{it}$  is the most reported value of commodity entering in the EU market from country  $i$  at world market prices
- $\mu_{it}$  is the country's interest
- $C_{it}$  are country characteristics such as agricultural GDP, total GDP, language spoken (English, French)
- $OT_{it}$  represent the factors calculated from the exporter survey for different obstacles to trade
- $\alpha_0, \alpha_1, \beta_1, \gamma_1$  are the coefficients estimated through the econometric analysis for the country characteristics, product characteristics and for the OTs, respectively

**JRC** **Results** *ijs*

**Probit models:**

- Establish association between obstacles to trade countries and exporter characteristics
- Relate trends of perceptions with country- and product characteristics
- Help to understand exporters decisions toward market strategies based on their export characteristics

↓

Not possible to calculate tariff equivalents for obstacles to trade

**JRC** **Gravity model** *ijs*

Explanatory variables	Coefficient (standard error)
Constant	-11.40 (40.10)
French speaking former colony	-0.36** (0.15)
ln Agricultural GDP	1.18*** (0.27)
Exportable commodities (coffee, tea and tobacco)	1.00*** (0.07)
Transport infrastructure	0.98** (0.38)
Sanitary and Phytosanitary regulations	-0.79** (0.34)
OT1	1.24
Number of observations	41

How do we interpret these results?





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Title: Non-tariff measures affecting agro-food trade between the EU and Africa. Summary of a IPTS Workshop

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**Abstract**

This report contains the presentations and the summary of the IPTS workshop "Non Tariff Measures (NTMs) affecting agro-food trade between the EU and Africa" held in September 2010 in Seville. The workshop brought together experts from research, policy making and business in order to exchange knowledge and discuss about NTMs and the issues associated with them. The workshop first gave an overview of NTM classifications as well as the methods in the analysis of NTMs. With this background case studies were presented, focusing on NTMs from the perspective of African exporters of agro-food products.

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