

Non-Tariff Measures in Agri-Food Trade: Improving Policy Coherence for Development

Introduction

Governments are increasingly called upon to respond to a variety of concerns raised by society in many areas such as the environment, animal welfare and food safety. And they are asked to do so in a coherent manner. Corrective actions are expected when markets either do not exist or fail and hence result in inefficient outcomes, such as unsafe products or disease outbreaks. To address those market imperfections, governments have a number of options available to intervene, including regulatory, subsidy or tax based measures.

In some cases, these policies are of a purely local or national nature with little or no impact beyond the borders of the country implementing them. But in the case of traded goods, non-tariff measures (NTMs) are becoming an increasingly important policy tool, particularly against a background of continued trade integration and lowering classical barriers to trade, such as tariffs and quotas.

The OECD works to promote greater transparency on NTMs and to improve our ability to measure their impact. Improved design of NTMs can also improve policy coherence for development (PCD), i.e. ensuring that the broader policies pursued by countries are coherent with the goal to promote worldwide development. ■

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DID YOU KNOW?

Supporting work on policy coherence for development is one of the primary objectives of the OECD Strategy on Development.

This Policy Brief examines regulations in the food and agriculture sector. It draws upon the results obtained from analysis using an OECD cost-benefit framework that allows for a systematic accounting of economic costs and benefits of NTMs. It presents the results of three case studies that focus on **mandatory measures implemented by OECD governments**. ■

Key observations

- The very nature of NTM's makes it very difficult to assess their economic impact.
- The trade cost impact of NTMs are more important than prevailing tariff rates in obstructing trade.
- Private voluntary standards are often more stringent than public mandatory standards and become the de facto conditions that determine market access.
- With a high share of agriculture in GDP and in exports, food regulation compliance costs have a relatively higher overall economic impact in low-income countries than in high-income countries.
- Cost-benefit analysis of NTMs forces decision makers to consider the beneficiaries and losers, *i.e.* the trade-offs, of a policy change. It shows that the trade and welfare effects of NTMs are mixed and vary from case to case.
- Hence, the challenge is to separate protectionist and non-protectionist measures and to identify measures that are less onerous for trade.

Non-tariff measures in agri-food trade

Non-tariff measures are policy measures, other than ordinary customs tariffs, that can potentially have

an economic effect on international trade in goods, changing quantities traded, prices, or both (MAST, 2008). Within this broad definition, three categories form the core of interventions which are on the rise worldwide:

A. *Sanitary and phytosanitary measures (SPS)*: Regulations that protect human and animal health (sanitary measures) and plant health (phytosanitary measures), in order to ensure food safety and to avoid the introduction of diseases and pests through trade.

B. *Technical barriers to trade (TBT)*: Regulations and mandatory standards that target technical characteristics of products, such as process and product standards, traceability and origin of material, and the related conformity assessment and certification.

C. *Other technical measures*: Policies and requirements which somehow did not fit into the previous two categories but look quite similar to them for analytical purposes.

Different trade partners may have different food safety standards and institutional capacity to enforce them. This may lead to imports of food that do not meet domestic requirements. Imperfect and incomplete monitoring at the border where it occurs compounds the health or environmental risk. In countries with ill-defined property rights, trade may also encourage unsustainable production of some goods for the export market, leading to a deterioration concerning global-commons issues, often related to conservation of ecosystems. Typically, the ability to effectively regulate the agri-food sector is more limited in low-income countries that lack institutions, capacity and information, as well as financial resources.

Most developing country exports go to high-income countries, but trade with other developing countries is

Table 1. Comparison of tariffs and NTM costs (percent of import value)

Country	NTM related trade costs	Tariffs (MFN)
Brazil	39.5	14.1
Canada	23.3	18.5
China	44.8	13.7
European Union	30.1	21.3
India	36.5	48.1
Korea	37.9	33.5
Russia	69.1	15.7
United States	49.5	6.4

Source: GTAP database for tariffs (based on MacMAPS and WTO) and OECD calculations for NTM trade costs, "The Impact of Trade Liberalisation on Jobs and Growth", OECD Trade Policy Working Paper no. 107.

increasingly important and dynamic. While all countries have benefited from widespread tariff liberalisation in the past decades, all countries still have an important market access agenda in reducing avoidable trade costs that arise from behind-the border measures. OECD analysis finds that the trade cost impacts of NTMs are more important than prevailing tariff rates in obstructing trade (OECD, 2011). This is true even in the more sensitive, and hence tariff-protected sector of processed foods. Table 1 presents estimates of the savings from NTM reduction for processed foods for selected countries and compares this to baseline MFN (most favoured nation) protection.

Most NTMs are put in place to assure that imported products comply with the same standards and regulations as domestic products. Trade costs and trade frictions arise from differences in regulations and their implementation. Obviously a “reduction to zero” is not a feasible option for those NTMs, and a certain amount of trade costs related to those measures will always exist. NTMs may be amongst the reasons why developing countries are not fully utilising market access (tariff) preferences in OECD countries, as the difficulties with complying with regulations on the import market may be the more binding constraints. With a high share of agriculture in gross domestic product and in exports, the costs associated with complying with food related regulations and standards have a relatively higher overall economic impact in low-income countries than in high-income countries.

There is also an important distinction to be made between private voluntary standards (PVS) and mandatory public regulation. Private actors (retailers, agri-food companies) are becoming increasingly active in developing standards; they are often implemented faster and go deeper than public regulations and become the *de facto* conditions that determine market access. Complaints about PVS nonetheless signal the apparent importance of these standards schemes for a growing number of exporting developing countries and raise a number of issues on the evolution of global sourcing, in particular by lead firms within a global value chain (GVC) framework (Box 1).

The very nature of non-tariff measures, i.e. the lack of transparency concerning their scope and effects, makes it very difficult to assess their economic impact, including on producers and consumers in developing countries. Many technical measures may restrict trade but improve welfare through a reduction in negative externalities (e.g. through reduced risk of importing pests or diseases) or informational asymmetries (e.g. through a label providing consumers with details on the product). Other measures can expand trade as they enhance demand for a good through better information about the good or by enhancing the good’s characteristics. Efficiency costs of NTMs are hence much less evident than the welfare losses associated with tariffs and quantity measures that restrict trade. ■

Box 1. Private voluntary standards and developing country access to global value chains

The role of private voluntary standards (PVS) has raised concerns about market access for developing country producers, in particular small and medium producers, who may be capital-constrained at the farm level and may be operating in countries whose lack of adequate infrastructures and services make it too difficult and costly for them to comply. Their products must now meet not only the importing country regulations, but also those set by major importers and retailers which are often more complex and stringent than those of governments. Since private standards schemes are expected to continue to evolve, increasing in stringency and extending over wider sets of attributes, what does this mean for access by developing country producers to global value chains? Today, multiplying global value chains spread value-added activities around the world, and the import content of exports is rising dramatically.

Few empirical analyses of private standards and market access for developing countries exist. In the case of small-holders, however, research based on case studies suggests that PVS can contribute to their exclusion from export markets (OECD, 2006), in particular if the necessary complementary conditions for better market integration of small-holders are absent. Where infrastructure, both in terms of public services and institutions, perform less well, integrating into global value chains becomes more difficult. A case study of Ghana’s pineapple sector, for example, shows that the sentiment among small-holders is that little or nothing is to be gained from upgrading agronomic practices to comply with standards, unless the infrastructures and services to the sector were likewise upgraded to enable exporters to meet increasingly competitive commercial requirements.

On the other hand, analysis by Maertens and Swinnen (2009) of the vegetable export chain in Senegal suggests that exports grew sharply despite increasing standards, contributing importantly to rural incomes and poverty reduction. Tightening standards induced a shift from smallholder contract farming to integrated estate production, altering the mechanism through which poor households benefit: through labor markets instead of product markets.

Financial and technical assistance, as well as continual monitoring, can help small-holders meet the private standards necessary to access GVC.

Cost-benefit analysis

In the absence of concrete indicators to measure policy coherence for development, cost-benefit analysis can be used to assess different policy options. It provides a rational basis for decision making by forcing decision makers to consider the beneficiaries and losers of a policy change.

By looking explicitly into potential benefits that NTMs may generate through addressing various types of market failures, the OECD cost-benefit framework referred to here allows for an economic assessment of alternative ways to address the same market failures (OECD, 2009). It aims to distinguish those consumers or producers that are concerned by the negative or positive externality and product attributes, from those that are not concerned. From a PCD perspective, it is particularly interesting to examine how NTMs implemented by developed countries may impact on developing countries.

Three broad classes of market failures are considered: i) failures affecting consumers, such as imperfect information related to food safety, but also consumer concerns relating to production methods; ii) failures affecting producers, such as animal or plant disease outbreaks; and iii) global commons issues, usually related to the conservation of valuable eco-systems. Without entering into a technical discussion, it can also be noted that the framework essentially is a partial equilibrium model. It comprises 'modules' for calculation of costs and benefits affecting i) domestic consumers; ii) domestic producers; iii) domestic government; and iv) foreign producers.

The case studies synthesised in this Policy Brief demonstrate how cost-benefit analysis can help identify

least-cost solutions of non-tariff measures. They focus on mandatory measures implemented by OECD governments, covering both developed and developing countries and looking at three diverse product groups: shrimps; cut flowers; and raw milk cheeses (OECD, 2010).

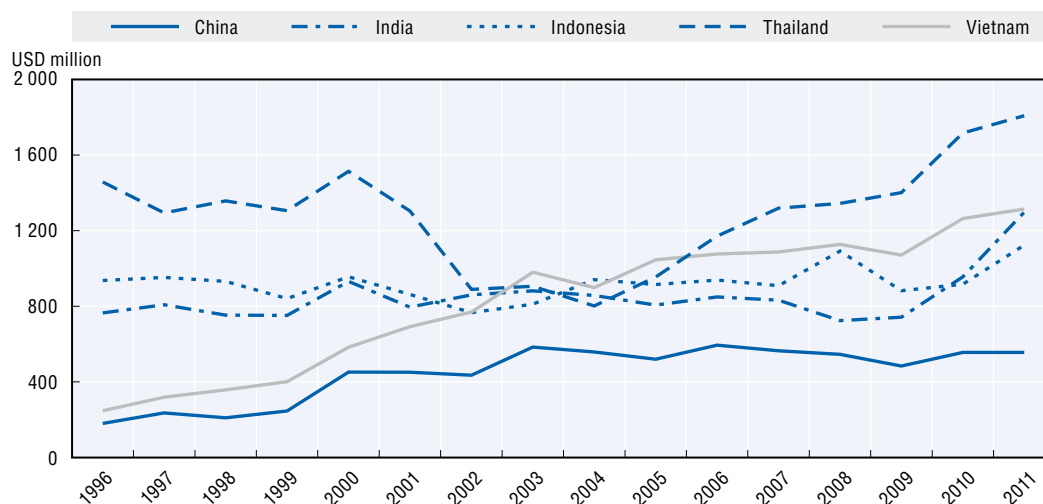
The findings reveal a mixed pattern of trade and welfare effects of non-tariff measures. They show that simply removing non-tariff measures that aim to correct for market failures would not be optimal, even if trade volumes would increase, since their intended benefits would be sacrificed, for example those related to human, animal or plant health. Analysis and policy must therefore quantify and respect these benefits, and assess NTMs on a case-by-case basis.

A. Shrimps: Consumer externality affecting trade with non-OECD countries

World shrimp production grew rapidly during the last two decades, with the majority of shrimps coming from Asia. The growth occurred mostly due to expansion of shrimp farming, and was followed also by a significant rise in trade. OECD countries, in particular the EU, the United States and Japan, are the main importing countries. OECD imports represented 80 percent of world shrimp imports in 2011. About half of OECD value-based imports of shrimps come from the top five world producers: China, Thailand, Indonesia, India and Vietnam (Figure 1).

The shrimp boost has brought up some important issues, again underlining the need for coherent policy making. Among the most important are health costs, as shrimps often contain diseases and/or harmful drug and antibiotics residues. Concerns are also related to

Figure 1. OECD imports from top five shrimp producers



Source: ITCS OECD database (value-based imports)

the environment, the illegal use of areas for shrimp aquaculture and corruption of local authorities, as well as bad working conditions.

Over the last decade, some OECD countries have regularly rejected import shipments of shrimps on health and safety grounds. They imposed temporary bans and asked for stronger health and safety controls. These actions, which were motivated by consumer protection, obviously affect production and exports of shrimps by developing and least developed countries.

Here, we examine the impact of a safety standard adopted by the EU, aiming at eliminating the use of antibiotics in shrimp aquaculture by exporters in India, Indonesia and Vietnam. Potentially toxic to humans, the use of these antibiotics has already been banned inside the EU for many years. Thus, the standard only affects non-European producers, eventually leading them to avoid antibiotics for their exports.

Cost-benefit analysis shows that when the standard is first implemented, foreign producers decrease their output and domestic EU producers increase their output, since domestic producers enjoy a better price without suffering the cost increase. But foreign producers suffer from the standard only if consumers are left unaware of the health issue. Conversely, they benefit from the standard if consumers are fully aware of the antibiotics problem and of the solution in the form of a strict enforcement of the production standard at the border; this awareness translates into higher willingness to pay for antibiotic-free shrimp, and the increase in consumer demand in turn leads to higher prices and profits even for foreign producers. Hence, in this case we can conclude that:

- Eventually, the enforcement of the safety standard would lead shrimp exporters to the EU to avoid antibiotics or – alternatively – abandon the EU as an export market.
- Imports from developing countries may decrease, but the overall international welfare linked to the regulation increases.
- Considering only trade volumes or values can be insufficient for characterising a NTM.
- The enforcement of a food safety standard can be socially preferable to the status quo situation, both domestically and internationally.

See Van Tongeren, F. *et al* (2010) for assumptions, calculations and quantitative results.

Indeed, stringent standards in OECD countries could also impact on the structures of the shrimp industries if they require significant investments. Smaller farms in low-income countries not able to meet the quality requirements could end up being excluded from the important export market, resulting in fewer and bigger farms and adverse consequences for smallholders and rural livelihood.

B. Cut flowers: Producer externality affecting trade with non-OECD countries

Since the beginning of the 2000s, international flower trade has shown a strong development. Cut flower exports from developing and least developed countries have increased over the last decade and reached USD 2 562.1 million in 2011. In 2011, six of the top ten countries of origin of cut flower imports were developing countries (*Table 2*).

Table 2. Top ten origin countries of cut flower imports in 2011 (USD million)

Country	Value of cut flowers imported from this country
Netherlands	3697.9
Colombia	1207.3
Kenya	1099.3
Ecuador	877.3
Ethiopia	368.5
Israel	242.8
Thailand	134.9
Malaysia	132.9
Belgium	99.8
Italy	94.5

Source: ITCS OECD database.

This could be explained by many factors. First, many developing countries have a favourable climate for cut flower production and can produce during the off-season in the northern hemisphere. This provides financial incentives to complement more traditional exports. Furthermore, many developing countries are attempting to diversify their export base in order to gain new sources of income and foreign exchange. EU imports of cut flowers represented more than 90 percent of world imports during 1996-2011 (Figure 2).

As trade in cut flowers has expanded, a growing number of NTMs aimed at regulating production and trade has been implemented. This case study deals with the impact of European protective measures, aimed at limiting the introduction and the spread of some invasive species that affect cut flower production and trade.

The EU planned in 2001 to reinforce its inspection procedures on cut flowers and new measures entered into force in April 2003. However, Ecuador and Israel, supported by Kenya, raised a trade concern in the World Trade Organization (WTO) SPS Committee. These countries feared that changes in the inspection procedures could affect their exports of cut flowers to the European market. Analysis suggests that the EU is the major trading partner of Kenya and Israel.

To assess the economic consequences, the analysis looks at the supply side and estimates the potential losses and gains for European producers, foreign exporters and governments, and European authorities. It suggests that the overall effects of tighter inspection are negative. More specifically:

- The increase of inspection costs for the EU outweighs the benefits from reduced infestation for the EU producers.
- Tighter inspection leads to losses for foreign suppliers, especially if inspection coincides with depreciated quality due to time spent during the inspection.
- Improved, but more costly, production methods in exchange for reduced inspection tightness also lead to diminished profits for foreign suppliers.

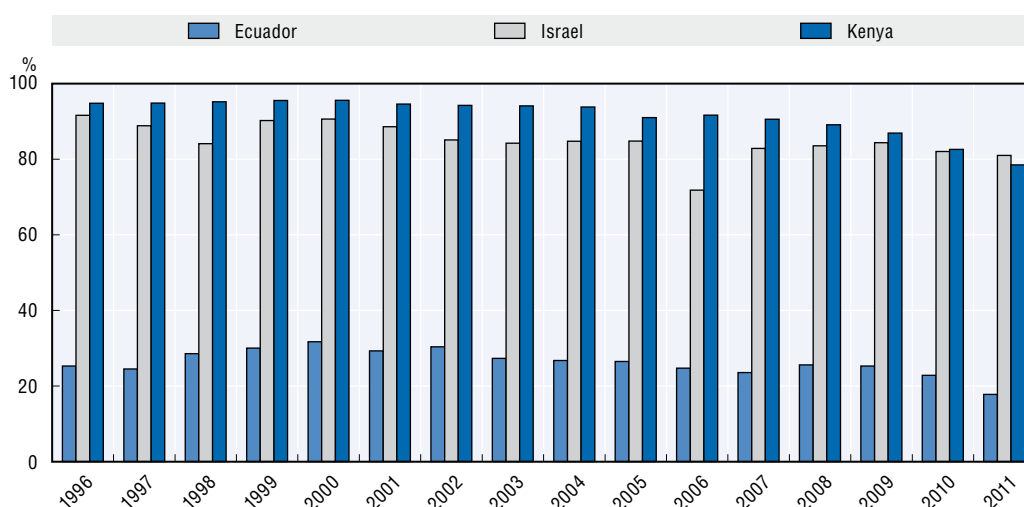
See Van Tongeren, F. *et al* (2010) for assumptions, calculations and quantitative results.

The level of contamination in foreign supplies, however, is a major determinant of both the results and the magnitude of profit losses to foreign producers and gains in the importing countries. Cost efficient improvements of production methods in countries exporting to the EU that can result in lower contamination rates can therefore be seen as a major step to enhance gains on both sides of the border.

C. Raw milk cheese: Consumer externality affecting intra-OECD trade

For many centuries, cheese was made from raw milk. But following the discovery of the pasteurisation process in 1862, the development of large-scale industrial cheese production started in the 19th century. Factory cheese eventually overtook traditional cheese making because of the fear of outbreaks of food-borne illnesses

Figure 2. EU imports as a percentage of world cut flower imports from Ecuador, Israel and Kenya



Source: ITCS OECD database.

associated with raw milk. Yet, raw milk cheeses have never disappeared completely and a growing number of consumers appreciate the original taste and smell of traditional cheeses, such as brie and camembert.

For most people, the consequences of related food-borne infections are not severe. However, particularly vulnerable groups of persons for whom the health risk is greater include young persons, frail elderly persons, pregnant women and persons whose immune system is compromised.

This case study looks at Canadian regulations related to cheese made from raw milk. In Canada, regulation of production and sale of cheese is a responsibility of both provincial and federal governments. The federal government alone is responsible for regulation of imports and exports. Raw milk cheeses are permitted under federal regulation in Canada subject to storage conditions. Prior to sale, cheeses must have been stored at a temperature of 2° Celsius or more for at least 60 days from the date of the beginning of the of the manufacturing process. French cheeses are exempt from the 60-day rule due to an agreement between the Canadian Food inspection Agency and the French authorities. In 2008, the Canadian province of Quebec withdrew the 60-day storage period and legalised the production and sale of all raw milk cheeses.

A cost-benefit analysis is used to discern the effects of a theoretical ban of young raw milk cheese (*i.e.* cheese that has been stored for less than 60 days). The impact of the ban on domestic welfare is calculated by summing up the change in consumer surplus, the elimination of societal costs, and the change in profits for domestic producers and retailers. Total welfare changes additionally include the change in foreign producers' profits. The results suggest that in total, and abstracting from the savings of additional costs for assuring safety in the supply chain, a ban of young raw milk cheese would lead to significant net costs:

- In the absence of young raw milk cheese, all consumers face significant losses.
- Given the large share of unconcerned consumers (*i.e.* those not belonging to high-risk groups) in the population, the bulk of the losses would be borne by this group, as their variety of choices is reduced.
- Foreign producers of young raw milk cheese lose all the profits related to the markets in Quebec.
- Domestic and foreign producers of pasteurised and older raw milk cheese gain following the increase in demand and hence prices.
- The ban, however, avoids additional costs for the society linked *e.g.* to public health care expenditures and losses of work time.

It should be noted that this welfare variation is partial since it abstracts from a number of cost items, such as additional costs of monitoring by national authorities, and control and cleanliness costs faced by private cheese-makers and raw milk suppliers. ■

How can OECD contribute to greater policy coherence with regard to NTMs?

Good regulation can facilitate trade and help spur economic growth and development. **The challenge remains to separate protectionist and non-protectionist measures and to identify alternative policies that are less onerous for trade.** Moreover, policy heterogeneity in the area of NTMs reflects differences across countries in terms of their approaches to regulation. While harmonisation across countries could facilitate trade, policy heterogeneity will have to be acknowledged.

To improve policy coherence for development in the design and implementation of NTMs, OECD countries should:

- Engage in systematic regulatory impact assessment prior to policy changes. Such assessments should take into account the perspective of exporters.
- Notify in a timely manner intended policy changes, so that potential trade frictions can be identified and solutions be sought prior to implementation.
- Promote dialogue with and support capacity building efforts in developing countries.

For their part, developing countries should:

- Step up their efforts to implement domestic policies that assure compatibility with international standards.
- Increase their capacity to monitor compliance of domestic producers and assist them in meeting the required standards and regulations for exports.
- Participate more actively in international standard setting bodies. ■

Organisation for Economic Co-operation and Development

Conclusions

The increasing prevalence of non-tariff measures is a permanent reality conditioning trade in food and agriculture products. A systematic assessment of their effects, across countries and products, is much warranted, in particular in view of the rising occurrence of trade frictions about food safety and food quality.

The OECD cost-benefit framework contributes to a more comprehensive welfare analysis of NTMs than that offered by looking at trade effects alone. It looks at the impacts of a proposed policy measure, such as a product standard, border inspection procedures and/or labelling requirements, on various groups of society and in different countries. By helping to identify and avoid unintended effects on vulnerable groups, particularly in developing countries, the framework can serve policy makers to achieve greater policy coherence for development. In the same way, policies that maximise synergies can also be identified with the help of cost-benefit analysis. ■

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