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NON-TARIFF MEASURES

from A to Z

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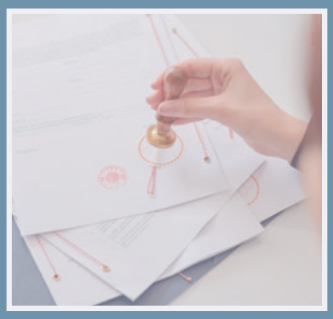

NON-TARIFF MEASURES

from A to Z

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ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
AVEs	ad valorem equivalents
CGE	computable general equilibrium
COVID-19	coronavirus disease
ESCAP	Economic and Social Commission for Asia and the Pacific
Mercosur	Southern Common Market
NTMs	non-tariff measures
SPS	sanitary and phytosanitary
TBT	technical barriers to trade
TRAINS	Trade Analysis and Information System
WTO	World Trade Organization

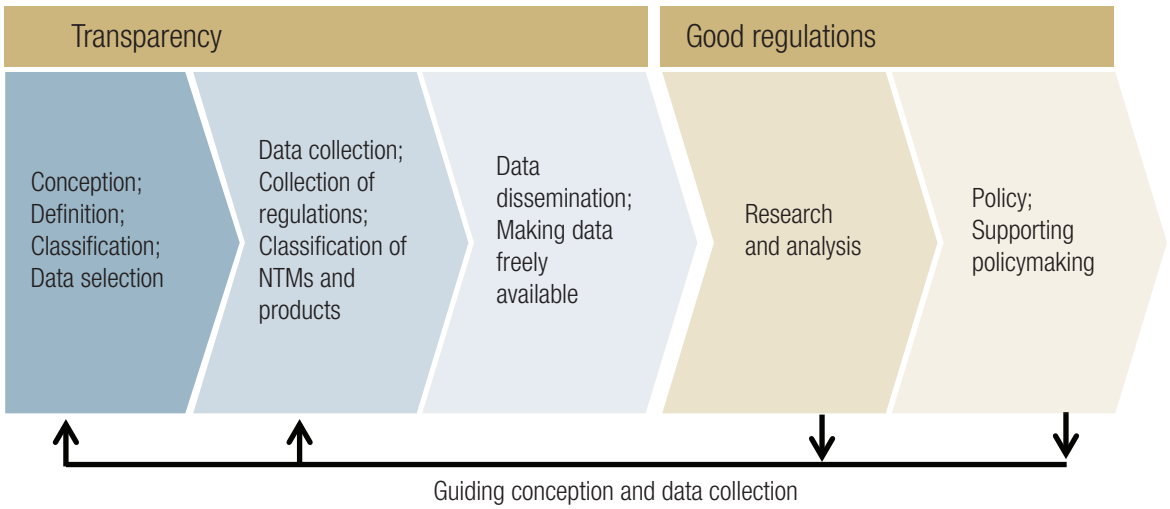
1. INTRODUCTION: UNCTAD NON-TARIFF MEASURES PROGRAMME

Trade-related regulations such as product and production requirements, as well as conformity assessments, are increasingly shaping trade by influencing who trades what and how much. For policymakers, importers and exporters, such non-tariff measures (NTMs) represent a major challenge. Many NTMs are primarily aimed at protecting public health or safety or the environment, yet they also substantially affect trade through informational, compliance-related and procedural costs. NTMs are policy measures other than ordinary customs tariffs that can potentially have an economic effect on international trade in goods, changing quantities traded or prices or both.[1] This neutral definition does not make judgments on the legitimacy of the measures nor the direction of their potential impact on trade. NTMs may decrease trade, for example, when trade costs increase or may increase trade, for example, when trust in foreign products increases. The concept comprises a wide area of policy measures. Two broad categories may be distinguished, as follows: traditional policy measures such as quotas and price control measures, which are generally intended to impact trade; and technical measures that mostly aim to protect health, safety and the environment, notably sanitary and phytosanitary (SPS) measures and technical barriers to trade (TBT). Many regulatory NTMs are indispensable for sustainable development. Non-tariff barriers are a subgroup of NTMs that have a protectionist intent or are more restrictive than necessary to achieve public policy objectives.

Understanding the uses and implications of NTMs is essential in the formulation of effective development strategies to achieve the Sustainable Development Goals. Increasing transparency and the understanding of NTMs can help traders identify the requirements they face and build the capacity of policymakers, trade negotiators and researchers to achieve a balance between the reduction of trade costs and the preservation of public objectives.

The UNCTAD non-tariff measures programme helps strengthen transparency and support good regulations (figure 1).

Figure1 | UNCTAD non-tariff measures programme



Source: UNCTAD.

This compendium provides an overview of global transparency efforts, including with regard to the international classification of NTMs, data collection and data dissemination, as well as approaches to achieving good regulations, including recent research results and analysis tools, social implications such as gender-related and environmental effects, a toolkit to assess cost effectiveness and NTMs and the online academy on NTMs. Each chapter provides highlights from the work of UNCTAD and references for further reading.

[1] As defined by the Multi-Agency Support Team (MAST), see UNCTAD (2010). *Non-tariff Measures: Evidence from Selected Developing Countries and Future Research Agenda* (United Nations publication. New York and Geneva).

2. THE INTERNATIONAL CLASSIFICATION OF NON-TARIFF MEASURES

As the role and importance of NTMs in international trade has been increasing, the demand for systematic, consistent and comparable data on NTMs has accordingly been growing.

UNCTAD has been at the forefront of identifying and classifying NTMs. In 2006, in collaboration with the Multi-Agency Support Team (UNCTAD, 2010), UNCTAD initiated the development of a definition and common taxonomy of NTMs. The common language was aimed at allowing for a shared understanding and enabling data collection, quantification, analysis and increased transparency with regard to NTMs. The Multi-Agency Support Team is comprised of UNCTAD and the following: Food and Agriculture Organization of the United Nations; International Trade Centre; Organisation for Economic Co-operation and Development; United Nations Industrial Development Organization; World Bank; and World Trade Organization (WTO).

As a result of the work of the Multi-Agency Support Team, a taxonomy of NTMs was developed in 2012. Since then, the classification has been revised to accommodate the changing realities of international trade and data collection needs. The latest revision by the Team took place in 2016–2019 and resulted in the latest edition of the *International Classification of Non-Tariff Measures* (UNCTAD, 2019). The United Nations Statistical Commission has approved this classification.

2.1 Overview of the classification

The *International Classification of Non-Tariff Measures* (UNCTAD, 2019) comprises 16 chapters covering different categories of measures (table 1). The first 15 chapters (A–O) cover import-related NTMs, that is, the requirements imposed by a country on imported products, and the final chapter (P) covers export-related measures, that is, the requirements imposed by a country on exported products. A distinction is made between technical measures (chapters A–C) and non-technical measures (chapters D–O). Technical measures comprise SPS measures and TBT, as well as pre-shipment inspections and other formalities, and are mostly aimed at fulfilling public policy objectives, such as with regard to the protection of human, plant and animal life and health, national security or the environment. Although their primary focus is not related to trade and they may apply equally to domestic producers, such measures nevertheless regulate and affect international trade and are therefore considered NTMs. Non-technical measures cover a range of policies, including traditional trade policies such as contingent trade-protective measures, including anti-dumping and countervailing duties (chapter D), quotas and non-automatic import licencing (chapter E) and price controls and para-tariff measures (chapter F).

Table 1 | International classification of non-tariff measures by chapter

Import-related measures	Technical measures	A	SPS measures
		B	TBT
		C	Pre-shipment inspection and other formalities
	Non-technical measures	D	Contingent trade-protective measures
		E	Non-automatic import licencing, quotas, prohibitions, quantity-control measures and other restrictions not including SPS measures or measures relating to TBT
		F	Price-control measures, including additional taxes and charges
		G	Finance measures
		H	Measures affecting competition
		I	Trade-related investment measures
		J	Distribution restrictions
		K	Restrictions on post-sales services
		L	Subsidies and other forms of support
		M	Government procurement restrictions
		N	Intellectual property
		O	Rules of origin
Export-related measures		P	

Source: UNCTAD, 2021.

2.2 Detailed tree structure under the classification

The classification of NTMs has a tree structure, whereby each of the 16 chapters is further divided into several subgroups to allow for more detailed categorization. Each chapter is disaggregated into categories with up to three levels; for example, at the finest level of detail, chapter A consists of 34 codes for NTMs (table 2).

Table 2 I Classification of non-tariff measures: Tree structure

A SPS measures
- A1 Prohibitions/restrictions of imports for SPS reasons
- (…)
- A2 Tolerance limits for residues and restricted use of substances
- (…)
- A8 Conformity assessment related to SPS conditions
  - A81 Product registration requirement
  - A82 Testing requirements
  - A83 Certification requirements
  - A84 Inspection requirements
  - A85 Traceability requirements
    - A851 Origin of materials and parts
    - A852 Processing history
    - A853 Distribution and location of products after delivery
    - A859 Traceability requirements not elsewhere specified
  - A86 Quarantine requirements
  - A89 Conformity assessments related to SPS conditions not elsewhere specified
- A9. SPS measures not elsewhere specified

Source: UNCTAD, 2021.

2.3 Useful websites[2]

UNCTAD (2021). Classification of NTMs. Available at https://unctad.org/topic/trade-analysis/non-tariff-measures/NTMs-classification.

2.4 Further reading

UNCTAD (2010). *Non-tariff Measures: Evidence from Selected Developing Countries and Future Research Agenda* (United Nations publication. New York and Geneva).

UNCTAD (2019). *International Classification of Non-Tariff Measures, 2019 Version* (United Nations publication. Sales No. E.19.II.D.14. New York and Geneva).

UNCTAD (2021). *Guidelines for the Collection of Data on Official Non-Tariff Measures, 2021 Version* (United Nations publication. Geneva).

[2] *Note*: All websites referred to in footnotes were accessed in November 2021.

3. GLOBAL DATA COLLECTION ON NON-TARIFF MEASURES

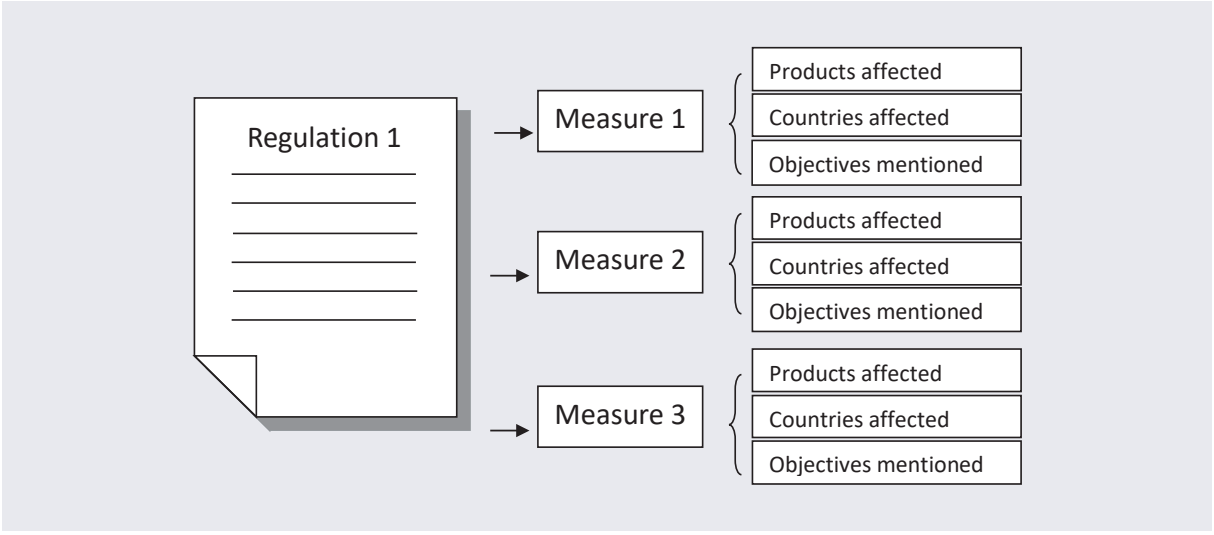
Since the 1990s, UNCTAD has been leading international efforts to collect data on NTMs. Country coverage and data quality are rapidly increasing, particularly since the data collection approach was further improved in 2012 and due to expanding collaboration with many international, regional and national partners, as well as the introduction in 2020 of the online data-entry tool under the Trade Analysis and Information System (TRAINS). Data on official NTMs are collected by identifying all trade-related national legislative documents, extensively analysing them and transforming the information therein into quantitative and qualitative data in a database. The same data collection and classification methodology is used for all countries, in line with the *International Classification of Non-Tariff Measures* and the *Guidelines for the Collection of Data on Official Non-Tariff Measures* (UNCTAD, 2019; UNCTAD, 2021).

The first step is to establish a national team to work with UNCTAD to collect data, generally comprising government officials, representatives of research institutes and independent experts. The team is trained through the UNCTAD course on data collection on NTMs, both online and through face-to-face workshops (see chapter 15). The training courses help build national capacity in the classification of NTMs and products and in the use of a consistent and comparable data collection approach.

The second step is the data collection process, which starts with the identification of sources of regulatory information in a country, such as laws, decrees and directives and including behind-the-border technical regulations that may also apply to domestic products. Unlike customs tariffs, which are regularly and comprehensively published in a tariff schedule, non-tariff regulations are often scattered across multiple sources and documents. In this regard, the team aims to ensure that the data are comprehensive and cover all NTMs applied to imports and exports. The bibliographical information of each document and regulation is registered in the database to ensure that all information can be traced to its source.

Once a relevant regulation has been identified and registered, each specific provision is classified under one of over 400 codes defined in the international classification of NTMs (UNCTAD, 2019). Each regulation may cover several different measures, for example, a required maximum residual limit for pesticides and a respective inspection requirement. For each measure the affected countries and products are also classified in detail, as well as the objectives of the measure (figure 2). Product classification is at the national tariff-line level or at the six-digit level under the Harmonized Commodity Description and Coding System, to ensure that information in the database can be linked to customs tariffs and trade data. The analysis and coding is performed by trained experts and, to ensure consistency, UNCTAD carries out extensive quality control during and at the end of the data collection process.

Figure 2 | Workflow for classification of measures



Source: UNCTAD, 2021.

Globally, data collectors have reviewed hundreds of thousands of pages of regulatory documents. The database now covers over 100 countries, over 15,000 different regulations and nearly 60,000 distinct measures. In a number of countries, data have been updated occasionally or regularly. Updating data is crucial because trade regulations change often, with new regulations being introduced and old regulations being amended or repealed. A key challenge in data collection efforts is ensuring the sustainability of data. UNCTAD aims to work with Governments to strengthen capacities, with a view to jointly collecting and maintaining data on NTMs in a continuous and effective manner.

3.1 Useful websites

UNCTAD (2021). Data collection. Available at https://unctad.org/topic/trade-analysis/non-tariff-measures/NTMs-data-collection.

3.2 Further reading

UNCTAD (2019). *International Classification of Non-Tariff Measures, 2019 Version* (United Nations publication. Sales No. E.19.II.D.14. New York and Geneva).

UNCTAD (2021). *Guidelines for the Collection of Data on Official Non-Tariff Measures, 2021 Version* (United Nations publication. Geneva).

4. DISSEMINATION OF DATA ON NON-TARIFF MEASURES

UNCTAD is continuously working on collecting and disseminating comparable information on NTMs worldwide. All data collected by UNCTAD and its many partners is gathered in the TRAINS database. This database has grown into the most complete collection of publicly available information on NTMs, covering over 100 countries and 90 per cent of world trade, and features a standardized approach that ensures cross-country comparability. To inform policymakers and help traders move goods across borders, UNCTAD has developed a dissemination portal for data on NTMs and worked with partners on other portals. The three main portals are as follows:

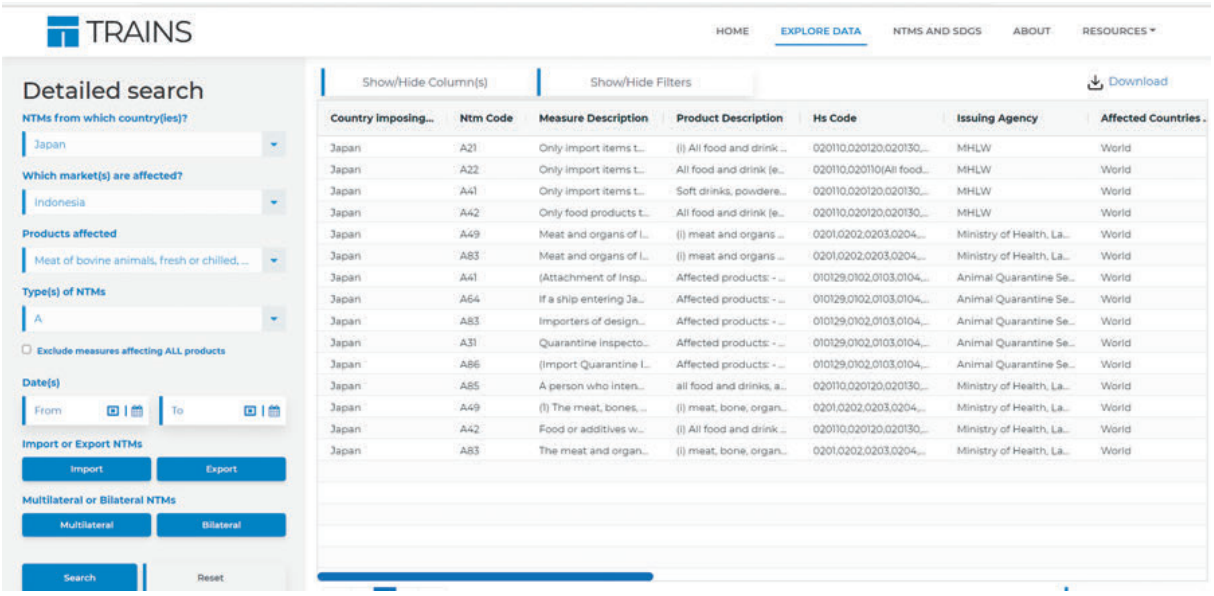
- TRAINS dissemination portal
- World Integrated Trade Solution
- Global Trade Help Desk

All three draw information on NTMs from the same database, that of TRAINS. However, their user interfaces are aimed at different clients.

4.1 Trade Analysis and Information System dissemination portal

In 2021, UNCTAD released a new edition of the TRAINS dissemination portal. Data on NTMs on the portal is fetched directly and in real time from the underlying database and its data-entry tool, to ensure seamless and up-to-date information. Users can freely access the data without registration. Policymakers or government analysts can gather information on NTMs applied by export partners or review existing NTMs in their country or region, to explore opportunities for strengthening policy coherence and regulatory cooperation. Importers and exporters can compare regulatory requirements across markets for specific products (using keywords or Harmonized System product codes) through interactive charts. Researchers can access large data sets for statistical analyses and download files containing all NTMs at the Harmonized System six-digit level. Users can customize searches by country implementing NTMs, markets affected, products affected or types of NTMs (figure 3).

Figure 3 | Trade Analysis and Information System dissemination portal: Example of search results



Source: UNCTAD, 2021a.

4.2 World Integrated Trade Solution

This portal provides data on tariffs and NTMs from TRAINS, along with international merchandise trade from the United Nations Comtrade database. The portal is maintained jointly by UNCTAD and the Word Bank. The TRAINS portal is most useful for browsing and filtering to find specific information, while data under the World Integrated Trade Solution is geared toward statistical analysis and may be downloaded in bulk. In addition, analytical tools for tariff- and trade-related simulations are provided. Users, after creating an account and logging in, can access data on NTMs by choosing the relevant submenu (view and export raw data) under the main menu (quick search) and can select countries and products and download raw data in various formats.

4.3 Global Trade Help Desk

This portal is a multi-agency initiative jointly led by the International Trade Centre, UNCTAD and WTO. It aims to simplify market research for companies, especially microenterprises and small and medium-enterprises, by integrating trade and business information into a single online portal. The initiative builds on existing data from the three organizations and draws on additional information from partner organizations, including the following: African Development Bank; Food and Agriculture Organization of the United Nations; Inter-American Development Bank; World Bank; and World Customs Organization. The portal serves as an integrated solution placing global trade information at the disposal of entrepreneurs worldwide. Through the portal, firms can compare demand for their products across markets, explore tariffs and other market access conditions, access details about buyers, navigate domestic export processes and find business partners.

4.4 Useful websites

Global Trade Help Desk (2021). Available at https://globaltradehelpdesk.org.

UNCTAD (2021a) TRAINS online. Available at https://trainsonline.unctad.org.

UNCTAD (2021b). Data dissemination. Available at https://unctad.org/topic/trade-analysis/non-tariff-measures/NTMs-data-dissemination.

World Integrated Trade Solution (2021). Available at https://wits.worldbank.org.

5. STATISTICS ON NON-TARIFF MEASURES

5.1 Non-tariff measures incidence statistics

The TRAINS database can be used to produce statistics on NTMs. Three basic indicators are employed to show the use of NTMs as policy instruments, with information on how often countries use NTMs, the most common types of NTMs and the most regulated sectors. Cross-country comparisons may be particularly useful when considering regional integration or market access issues, since major regulatory differences between trading partners may add difficulties for traders. In addition, the indicators may be used to test hypotheses in economic models and to indicate the possible impact of NTMs on trade. The data may also be used for other development or welfare-related analysis.

The three standard indicators are as follows:

- Frequency index, which captures the share of traded product lines subject to at least one NTM
- Coverage ratio, which captures the share of trade subject to NTMs; unlike the frequency index, it is weighted by import values rather than traded product lines
- Prevalence score, which indicates the average number of distinct NTMs applied in a country to regulated products, thereby measuring the diversity and intensity of NTMs

5.2 General results

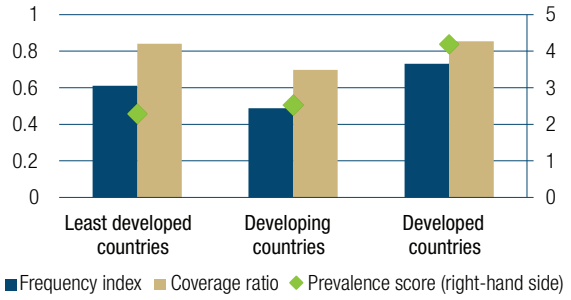
For the over 100 countries in the TRAINS database, analysis using these indicators reveals four stylized facts (UNCTAD and World Bank, 2018). First, almost 60 per cent of imported products worldwide, representing almost 80 per cent of the value of imported goods, must be in compliance with at least one NTM. On average, an imported product must be in compliance with about three NTMs. One third of exported products must also be in compliance with NTMs applied by the exporting country. Second, developed countries regulate a larger share of their imports and impose more regulations on each imported product than developing countries or the least developed countries; and SPS measures and TBT are used more frequently among developed countries. At the same time, developed countries regulate their exports less than other country groups. Third, across all countries, NTMs are most intensely applied in the agrifood sector. Fourth, TBT (chapter B) are the most frequent form of NTMs, affecting around 40 per cent of product lines and about 70 per cent of world imports, followed by export-related measures (chapter P) and quantitative restrictions (chapter E). However, in the agrifood sector, SPS measures are the most frequent.

5.3 Results by level of development

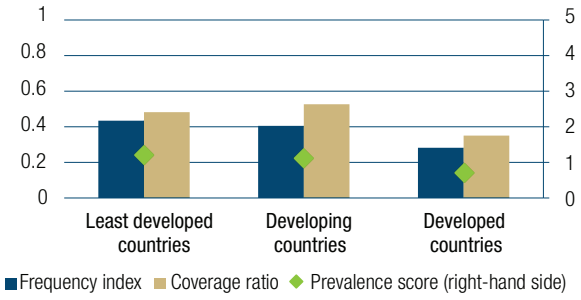
Analysis shows that developed countries regulate three quarters of imported products; developing countries, half; and the least developed countries, 60 per cent (figure 4 (a), frequency index). This affects around 80 per cent of trade for developed countries and the least developed countries; and 70 per cent for developing countries (figure 4 (a), coverage ratio). For each traded product, developing countries and the least developed countries have between two and three NTMs; and developed countries, over four NTMs, on average (figure 4 (a), prevalence score). Export regulations are more prevalent in developing countries and the least developed countries than in developed countries (figure 4 (b)).

Figure 4 | Non-tariff measure indicators by development level

(a) Import-related non-tariff measures



(b) Export-related non-tariff measures



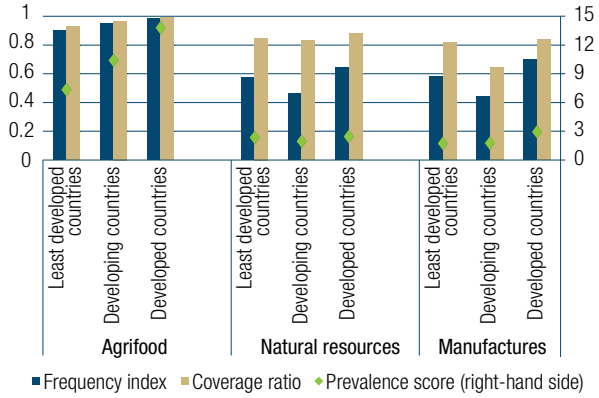
Source: UNCTAD and World Bank, 2018.
Note: Import-related NTMs are conditions or requirements imposed by a country on imported products and export-related NTMs are requirements imposed by a country on exported products, such as a requirement to obtain a permit before exporting a chemical product.

5.4 Results by level of development and sector

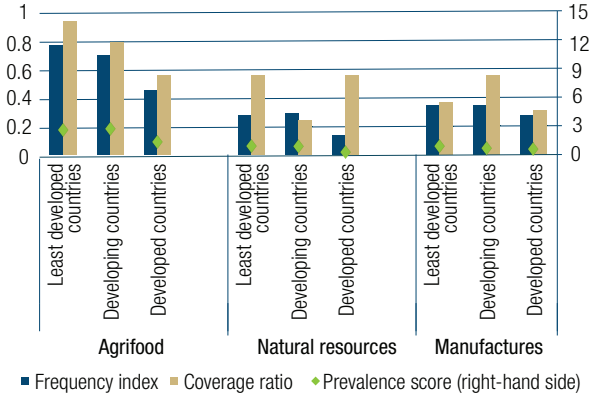
Across countries, agrifood products are the most regulated. Between 90 and 100 per cent of imported products are affected by NTMs. With 50 to 60 per cent of imported product lines, natural resources and manufactured products are less frequently regulated. However, NTMs are concentrated in highly traded sectors, so that the coverage ratio still ranges between 65 and 90 per cent in all country groups. Across sectors, developed countries regulate more intensively than developing countries and the least developed countries (figure 5). For example, for each imported agrifood product, the least developed countries apply, on average, 7 NTMs and developed countries, 13 NTMs (figure 5 (a), prevalence score). While export-related NTMs are generally less common, agrifood products are also the most affected (figure 5 (b)).

Figure 5 | Non-tariff measure indicators by development level and sector

(a) Import-related non-tariff measures



(b) Export-related non-tariff measures



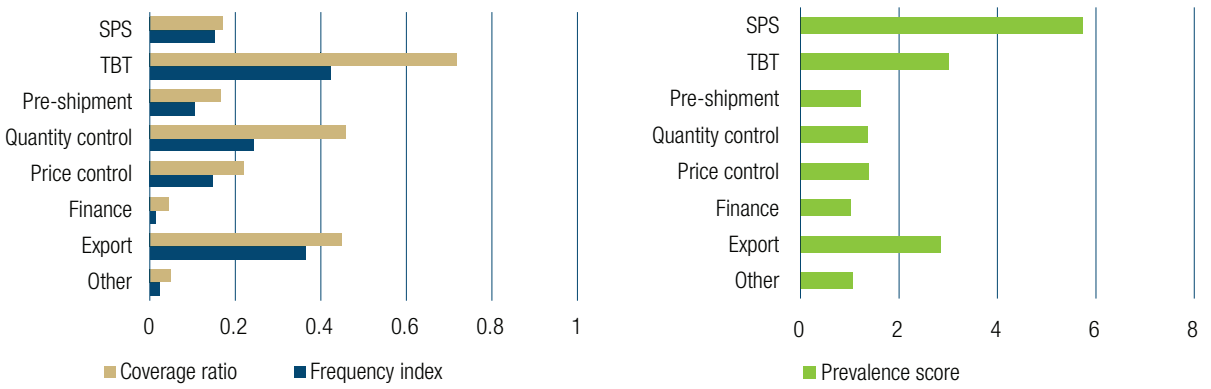
Source: UNCTAD and World Bank, 2018.

5.5 Results by type of non-tariff measure

More than 40 per cent of imported products worldwide must be in compliance with at least one TBT, which represented more than 70 per cent of world imports in 2019 (figure 6). A quarter of all imports must be in compliance with licencing requirements, quotas or other quantity control measures, which represents half the value of total imports. Since SPS measures are mostly applied to agrifood products, their share is lower,

at around 20 per cent of global import value. However, SPS measures have the highest prevalence score. On average, each imported product must be in compliance with an average of almost six SPS measures in contrast with three TBT.

Figure 6 | Non-tariff measure indicators by type of measure



Source: UNCTAD and World Bank, 2018.

Developing and developed countries impose a greater number of technical measures (SPS measures, TBT and pre-shipment measures) compared with the least developed countries; developing and developed countries impose between four and five technical NTMs on each product and the least developed countries impose three, on average. With regard to non-technical measures, the least developed countries impose the highest number, namely, 2.3 measures for each product, on average; and developing and developed countries, less than 2 measures.

5.6 Further reading

UNCTAD (2013). *Non-Tariff Measures to Trade: Economic and Policy Issues for Developing Countries* (United Nations publication. New York and Geneva).

UNCTAD (2018). *UNCTAD TRAINS: The Global Database on Non-Tariff Measures User Guide, Version 2* (United Nations publication. New York and Geneva).

Penello Rial D (2019). Computing non-tariff measures indicators: Analysis with UNCTAD TRAINS data. Research Paper No. 41. UNCTAD.

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WTO (2012). *World Trade Report 2012: Trade and Public Policies – A Closer Look at Non-Tariff Measures in the Twenty-First Century* (Geneva).

WTO, UNCTAD and International Trade Centre (2021). *World Tariff Profiles: Special Topic – Non-Tariff Measures* (Geneva).

6. NON-TARIFF MEASURES AND SUSTAINABLE DEVELOPMENT

The 2030 Agenda for Sustainable Development states that international trade is an engine for inclusive economic growth and poverty reduction, and contributes to the promotion of sustainable development. NTMs are strongly linked to the Sustainable Development Goals related to health and safety, the environment and climate, public security and peace.

6.1 Direct and indirect linkages

To understand how NTMs interact with sustainable development, it is helpful to distinguish between direct and indirect linkages, as follows:

- Direct linkages: Policies that have an immediate effect on sustainability. Some NTMs are aimed primarily at addressing issues related to the Goals, such as food, nutrition and health, sustainable energy, sustainable production and consumption, climate change and the environment. For example, target 15.c is to enhance global support for efforts to combat the poaching and trafficking of protected species; NTMs in this regard would be used to directly prohibit the import and export of endangered species
- Indirect linkages: NTMs that affect trade as a means for economic development. Regardless of the objectives of the measures, NTMs can increase trade costs and, consequently, impair economic development and indirectly hamper sustainable development

These different linkages to sustainable development show that good policymaking requires finding a balance between reducing trade costs related to NTMs (indirect effects) and achieving public policy goals through NTMs (direct effects).

6.2 Non-tariff measures that directly address the Sustainable Development Goals

The Economic and Social Commission for Asia and the Pacific (ESCAP) and UNCTAD (2019) have developed a methodology to assess the share of NTMs that directly contribute to achieving particular Goals, by matching data on NTMs from the TRAINS database with a concordance table comprising the relevant target; type of measure, such as an export prohibition; and product, such as endangered species (see Kravchenko et al., 2019, for the full table). Examples are provided in table 3.

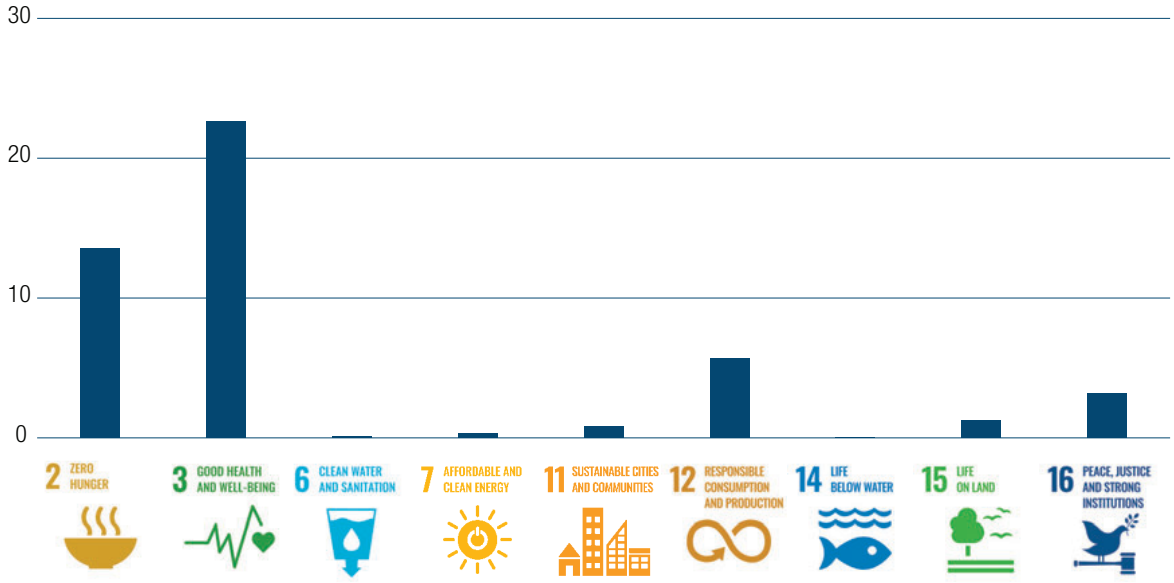
Table 3 I Direct linkages between non-tariff measures and the Sustainable Development Goals

Goal	Type of non-tariff measure and product (and related classification)
2 (zero hunger)	Treatment for elimination of pests and disease-causing organisms in imported agricultural and fishery products (A5)
	Conformity assessment related to SPS conditions of imported food products (A8)
3 (good health and well-being)	Import authorization related to TBT for medicines to ensure their quality and safety (B14)
	Labelling requirement on imported tobacco and alcohol to warn of harmful effects on human body (B31)
6 (clean water and sanitation)	Water-use efficiency requirement on imported water-using equipment (B7)
7 (affordable and clean energy)	Labelling requirement on imported vehicles and electronic appliances to indicate energy efficiency levels (B31)
11 (sustainable cities and communities)	Specification for imported fuel-using motor vehicles on fuel exhaust and noise generation (B7)
12 (responsible consumption and production)	Export authorization for technical reasons for hazardous chemicals and waste in accordance with the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (P11)
	Import prohibition of ozone-depleting substances in accordance with the Montreal Protocol on Substances that Deplete the Ozone Layer (E323)
14 (life below water)	Catch certification scheme for imported fish to end illegal, unreported and unregulated fishing (B83)
15 (life on land)	Import prohibition of endangered species in accordance with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (E323)
	Traceability requirements for imported timber to end illegal logging (B85)
16 (peace, justice and strong institutions)	Inspection requirements of mine sites of imported metals to ensure responsible sourcing (B81)
	Requirement to pass through specified port of customs for imported nuclear materials that can be used for the production of weapons (C3)

Source: UNCTAD, based on Kravchenko et al., 2019.

Using this methodology, ESCAP and UNCTAD (2019) have calculated the share of NTMs that directly address Goals 2, 3, 6, 7, 11–12 and 14–16 (figure 7). Over 20 per cent of NTMs worldwide directly address Goal 3. Smaller but meaningful shares of NTMs directly address Goals 2, 12 and 16. Using the TRAINS database, users can compare the share of Goals-related NTMs between any two countries and worldwide.

Figure 7 I Share of non-tariff measures that directly address particular Sustainable Development Goals
(Percentage)



Source: UNCTAD.

6.3 Useful websites

UNCTAD (2021a). Exploring linkages between NTMs and the Sustainable Development Goals. Available at https://trainsonline.unctad.org/sdgs.

UNCTAD (2021b). NTMs and the Sustainable Development Goals. Available at https://unctad.org/topic/trade-analysis/non-tariff-measures/NTMs-and-SDGs.

6.4 Further reading

Kravchenko A, Semenova M, Lee S and Duval Y (2019). Exploring linkages between non-tariff measures and the Sustainable Development Goals: A global concordance matrix and application to Asia and the Pacific. Trade, Investment and Innovation Working Paper Series No. 4. ESCAP.

ESCAP and UNCTAD (2019). *Asia-Pacific Trade and Investment Report 2019: Navigating Non-Tariff Measures Towards Sustainable Development* (United Nations publication. Sales No. E.19.II.F.14. Bangkok).

UNCTAD (2015). Non-tariff measures and Sustainable Development Goals: Direct and indirect linkages. Policy Brief No. 37.

7. QUANTIFYING THE COST IMPACT OF NON-TARIFF MEASURES

The mere presence of NTMs provides little information on their actual impact on international trade. Most NTMs are generally trade restrictive because they add to trade costs, yet their impact tends to differ across economic actors. The effect of NTMs can be quantified by estimating their impacts on trade flows (in terms of percentage or value) or by assessing how much they add to trade costs through the estimation of ad valorem equivalents (AVEs). Similar to tariffs, AVEs represent the costs (in terms of percentage) that the presence of NTMs adds to trade.

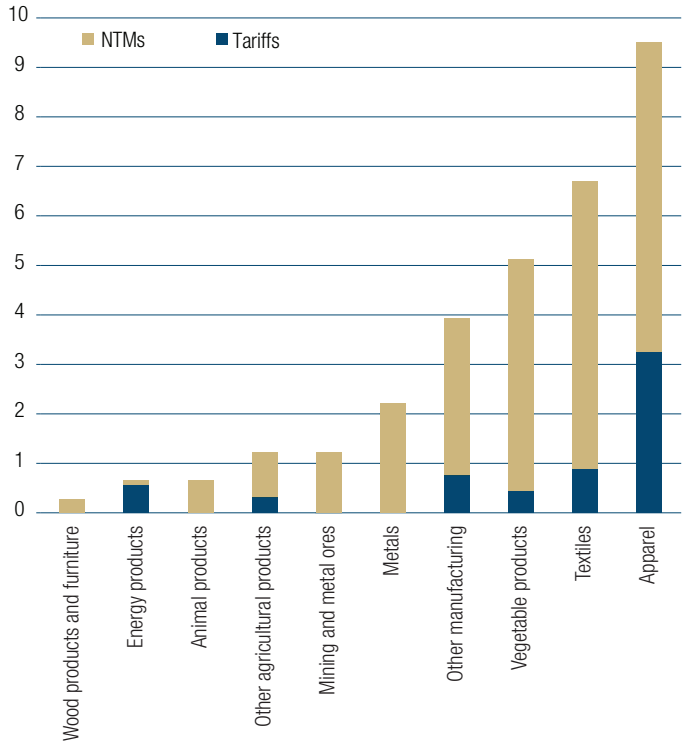
Most quantitative assessments of the effects of NTMs on international trade rely on some form of the gravity model (see UNCTAD and WTO, 2020). The advantage of the gravity model is its ease of use in assessing trade costs. Under the gravity model framework, the effects of NTMs on international trade can be estimated using incidence measures as explanatory variables. Use of the gravity model provides an assessment of the effects of NTMs on the magnitude of trade flows and AVEs can be derived by using import-demand elasticities. The framework is also suitable for identifying distortionary effects of NTMs.

An alternative approach consists of directly estimating AVEs by calculating price gaps or by feeding price data into an econometric model. This approach provides for easier computation and interpretation of AVEs. The main drawback is that it requires reliable price data, which is rarely available. Importantly, NTMs have effects that do not always manifest in prices. Moreover, price models are generally not as flexible as the gravity model.

7.1 Comparing the impacts of tariffs and non-tariff measures

A quantitative assessment of NTMs is useful for the trade policymaking process at the multilateral, regional and national levels. It can provide information on the impact of NTMs on the import of a particular product or on trade between specific countries and it can help ascertain the trade effects of multilateral and regional cooperation initiatives such as trade integration strategies and trade facilitation programmes. Quantitative assessments can also be used to compare the effects of NTMs with those of other trade policy measures. For example, gravity model estimations show that facilitating compliance by the least developed countries with NTMs implemented by the Group of 20 countries would increase exports from the former by up to $23 billion, equivalent to about 10 per cent of their total trade (Nicita and Seiermann, 2016). These effects are about double the estimated results from the elimination of all remaining Group of 20 tariffs on imports from the least developed countries. Lastly, quantitative assessment can also help provide insights on the effects of NTMs at the sectoral level. For example, with regard to facilitating compliance with Group of 20 trade policies on exports from the least developed countries, the sectors that would see the greatest increases in trade are vegetable products, textiles and apparel (figure 8).

Figure 8 | Effects of Group of 20 trade policies on exports of the least developed countries, selected sectors: Export losses
(Billions of dollars)

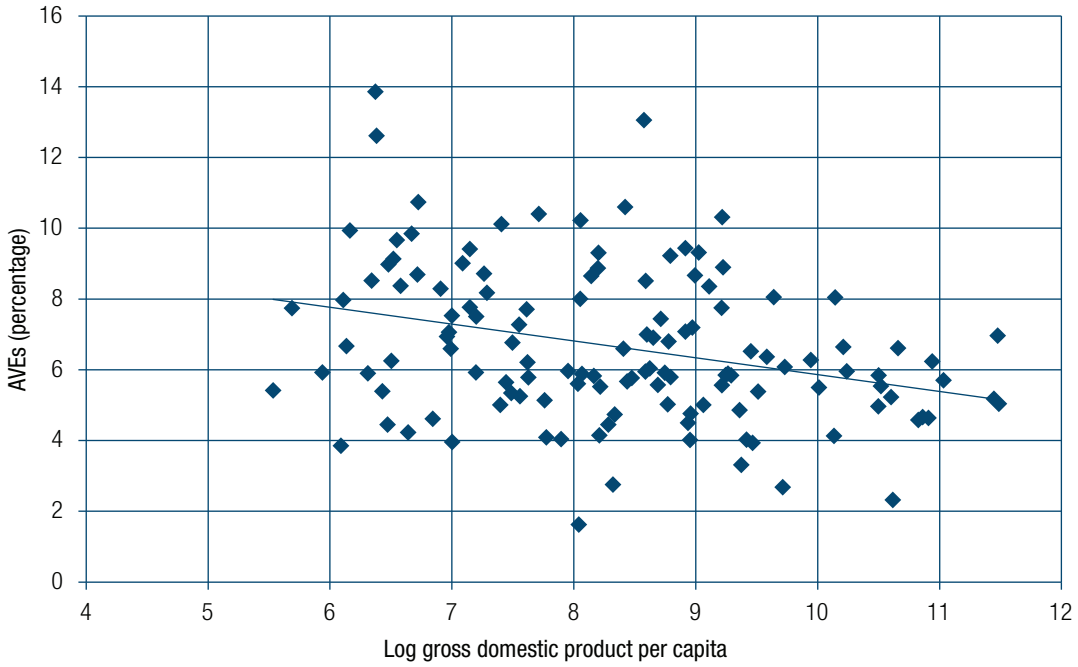


Source: Nicita and Seiermann, 2016.

7.2 The most affected by non-tariff measures: Developing countries and the least developed countries

The assessment of the effects of NTMs sheds light on the extent to which NTMs alter international competitiveness. Compliance costs associated with many types of NTMs generally pose more of a burden on small firms and on countries with a less developed trade or productive infrastructure. This heterogeneity of effects is driven by economies of scale, fixed costs and differences in organizational, administrative and technical capabilities. Trade costs related to NTMs faced in foreign markets, as measured in AVEs, tend to be relatively higher for poorer countries and to generally decrease with the level of development, as measured by gross domestic product per capita (figure 9).

Figure 9 I Ad valorem equivalents faced in foreign markets, by exporter gross domestic product per capita

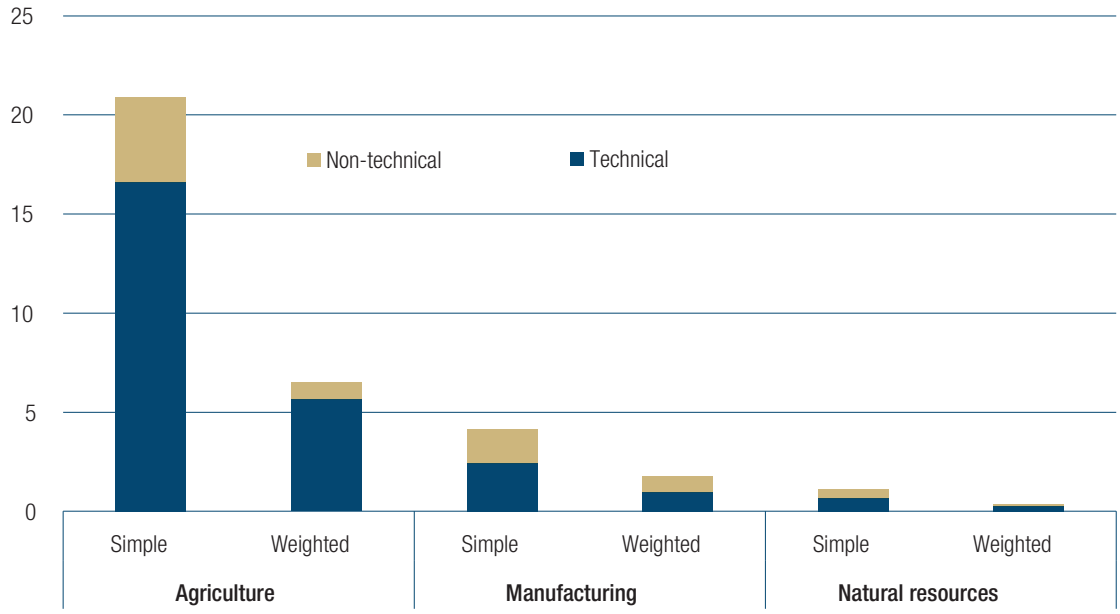


Source: UNCTAD and World Bank, 2018.

7.3 Technical and non-technical non-tariff measures

With regard to the impacts of technical and non-technical NTMs across broad sectors, agricultural products are most affected by NTMs, with total AVEs of about 20 per cent in simple average terms, and these costs are mostly due to technical NTMs, specifically SPS measures, which are highly concentrated in this sector (figure 10). On a trade-weighted basis, the cost of NTMs represents about 6 per cent of the value of world agricultural trade, equivalent to $75 billion in global trade costs. With regard to manufacturing, the simple and weighted average AVEs are 4 and 2 per cent, respectively. However, since the value of trade in manufacturing is much higher than that of trade in agriculture, the global cost of NTMs in manufacturing sectors accounts for about $250 billion. Technical NTMs account for most of these costs, yet non-technical NTMs hold a more significant share in the manufacturing sector than in the agricultural sector. With regard to products categorized under natural resources, the impact of NTMs is minimal.

Figure 10 | Ad valorem equivalents of non-tariff measures, by broad category of products
(Percentage)



Source: UNCTAD and World Bank, 2018.
Note: Technical measures comprise SPS measures and TBT and are mostly aimed at protecting, inter alia, health, safety and the environment. Non-technical measures, such as quotas, have primarily economic objectives.

7.4 Further reading

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UNCTAD and World Bank (2018). *The Unseen Impact of Non-Tariff Measures: Insights from a New Database* (Geneva).

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8. DEEP REGIONAL INTEGRATION: THE REGULATORY DISTANCE METHOD

Given the necessity of SPS measures and TBT in protecting health, safety and environment, such NTMs cannot be eliminated. Instead, in order to help reduce costs while maintaining regulatory benefits, one key approach is the harmonization of requirements. However, due to the complexity of these measures, it is difficult to assess the current level and impact of regulatory convergence or divergence. In response to this challenge, UNCTAD has developed the regulatory distance methodology, to analyse data on NTMs in order to assess the potential benefits of deep regional integration.

8.1 The concept of regulatory distance

The basic concept is illustrated in table 4. In the example, countries X and Y both apply the maximum residue limit of certain substances for beef and also use inspections as a conformity assessment procedure with regard to this limit. The regulatory structures appear similar, that is, the regulatory distance is short. However, country Y also requires an SPS certification procedure as an additional conformity assessment. With this third measure, the regulatory distance between the two countries increases slightly. Country Z applies only a special authorization requirement. This type of discretionary restriction differs substantially from the more specific and transparent criteria for products used in countries X and Y to regulate imports. The regulatory distance between country Z and countries X and Y is therefore greater.

Table 4 | Non-tariff measures: Sample data mapping in terms of regulatory distance

Non-tariff measure (and related classification) Example product: Beef	Country			
	X	Y	Z	
Maximum residue limit (A21)	1	1	0	b) Analysis of regulatory distance based on data
SPS inspection (A84)	1	1	0	
SPS certification (A83)	0	1	0	
Special authorization (A14)	0	0	1	
a) In-depth analysis of specific regulations to compare stringency of measures				

Source: UNCTAD, based on Cadot et al., 2015.

8.2 Calculation and visualization

UNCTAD data on NTMs now covers over 100 countries, over 5,000 different products and 58 distinct categories of technical NTMs. This data set allows for calculations of the aggregated regulatory distance in terms of specific sectors or across all goods and comparisons between any number of countries.

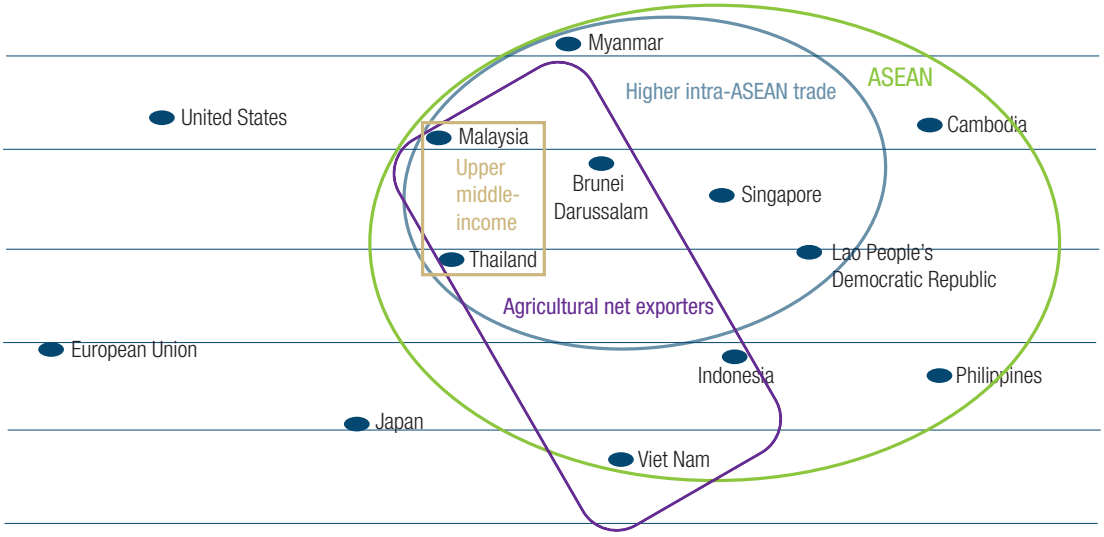
The regulatory distance between countries i and j, in year t, across products K and types of measures n, is calculated as follows:

$$RD_{ij.t} = \frac{1}{L\,K}\sum_{l}^{L}\sum_{k}^{K}\left|n^{l}_{ijkt} - n^{l}_{jikt}\right|$$

The statistical technique called multidimensional scaling allows for visualizations of regulatory distance. The aggregation equation above yields a single figure for the regulatory distance between each pair of countries, which can then be plotted on a graph. The distance between two countries on the graph represents the regulatory distance (rather than geographical, if the graph is compared with a map). The graph does not show whether there is more or less regulation, but only the relative positions of similarity, that is, location of a country to the north, east, south or west of the graph has no significance.

Regulatory distances between member States of the Association of Southeast Asian Nations (ASEAN) compared with the highly regulated markets of Japan, the United States of America and the European Union are illustrated in figure 11. The distances between these developed countries are relatively large. The four ASEAN member countries that are net exporters of agricultural goods are closer to these developed markets than other ASEAN member countries. The two upper middle-income countries in ASEAN, Malaysia and Thailand, are also close to each other. Notably, ASEAN member countries with greater shares of intraregional trade have shorter regulatory distances between them. Brunei Darussalam and Singapore show similarities, as two small and import-dependent high-income countries.

Figure 11 | Regulatory distance map: Agricultural sector

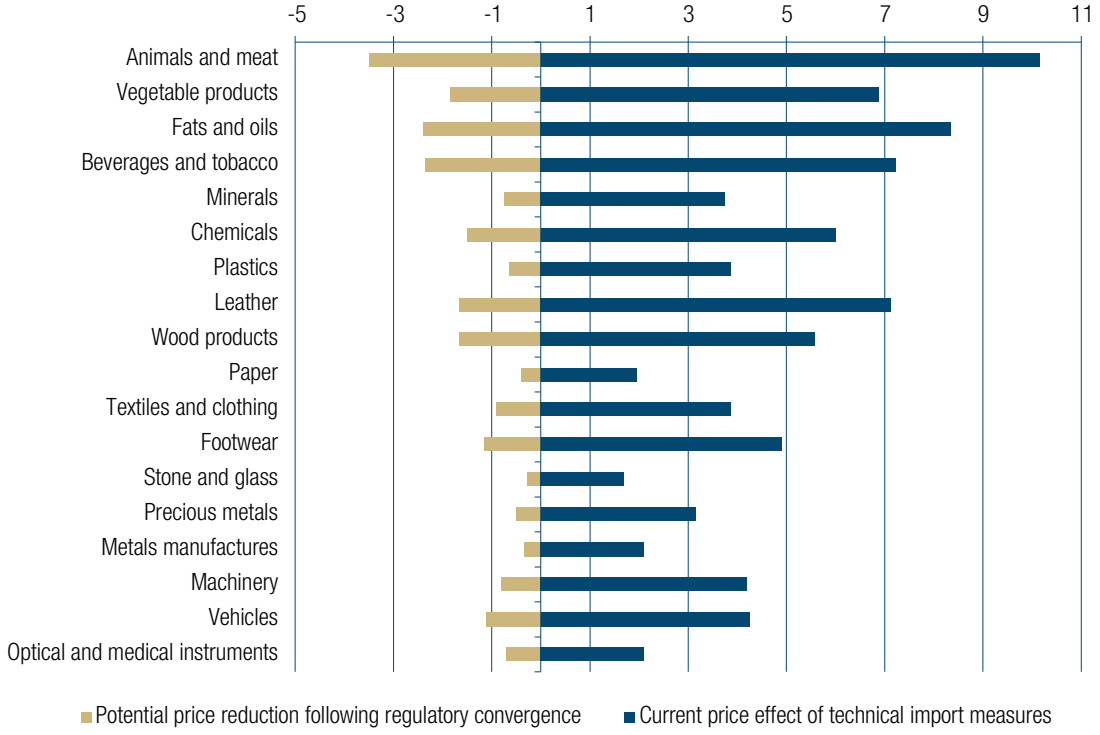


Source: UNCTAD, based on Knebel and Peters, 2019.

8.3 Econometric analysis and reform potential

Econometric analysis of trade unit values shows the significant impact of regulatory distance (Knebel and Peters, 2019). Each technical measure that is not in line with the policy of a country's trading partner increases the price of traded goods by 2.4 per cent. However, if domestic and foreign measures overlap, the price-increasing effect nearly disappears. This highlights the importance for policymakers, as well as the trade and development community, of supporting the global and regional harmonization of NTMs. Regulatory cooperation can help reduce trade costs significantly. A simple linear extrapolation of the estimation results shows that the total costs related to NTMs could be reduced by 10–23 per cent through moderate regulatory reform. UNCTAD has conducted regional studies to assess the potential benefits of regulatory convergence in ASEAN (Knebel and Peters, 2019), the Economic Community of West African States (UNCTAD, 2018), the Southern Common Market (Mercosur; UNCTAD, 2017) and the Southern African Development Community (UNCTAD, 2015). Most of these studies include an analysis of the regulatory distance and reform potential, including, for example, potential sectoral trade cost reductions in intra-ASEAN trade following policy reform (figure 12).

Figure 12 | Association of Southeast Asian Nations: Costs of technical measures and potential reductions



Source: Knebel and Peters, 2019.

8.4 Further reading

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9. THE ROLE OF INTERNATIONAL STANDARDS

The costs of NTMs, particularly technical measures, are aggravated when importers and exporters must comply with divergent technical requirements in different markets. International standards are an effective way of reducing this challenge. Adhering to international standards is a way of harmonizing with those countries that do the same.

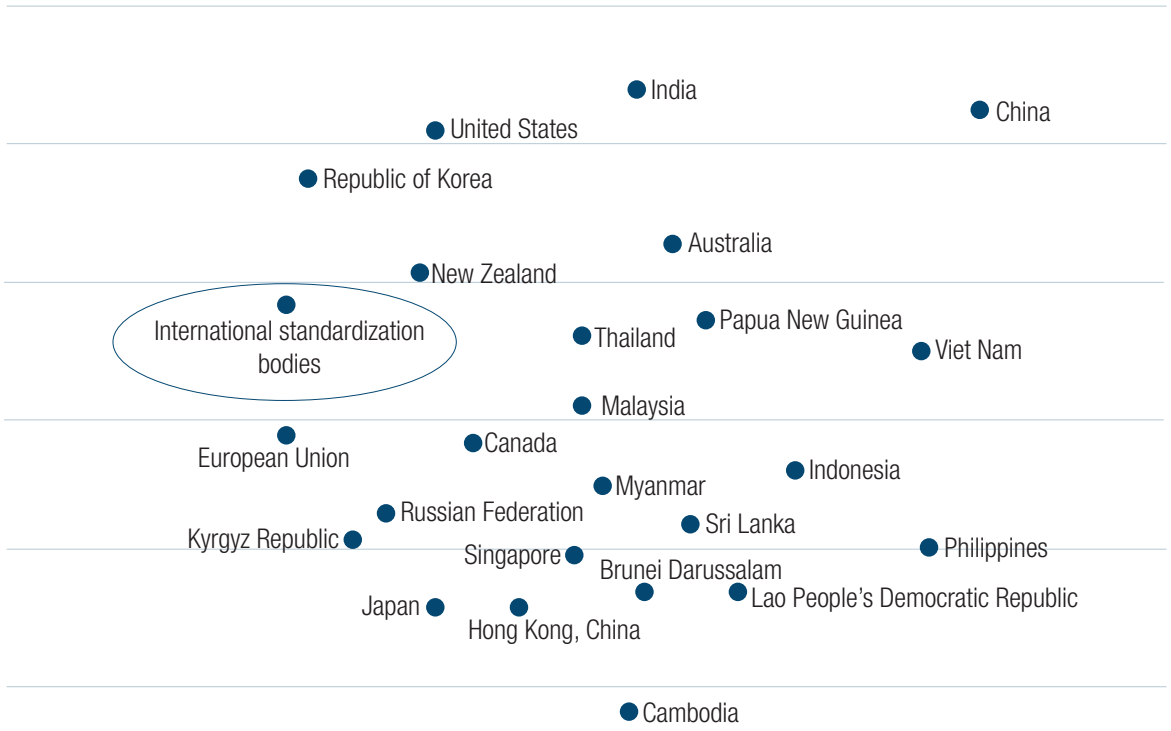
International standards are developed by international standardization bodies. They are mainly aimed at ensuring safe, reliable and good quality products for consumers and the environment, as well as interoperability between products. They are also designed to reduce unnecessary barriers to trade, assist harmonization and, in general, facilitate international trade. The Agreement on the Application of SPS Measures and the Agreement on TBT, under WTO, both recognize the important contribution made by international standards wherever they exist. The Agreement on TBT does not name specific standards. The Agreement on the Application of SPS Measures refers to international standards, guidelines and recommendations developed by the following international organizations: Codex Alimentarius Commission, for food safety; World Organization for Animal Health (formerly the International Office of Epizootics), for animal health and zoonoses; and secretariat of the International Plant Protection Convention, for plant health. These may be referred to jointly as the “three sisters”.

Compliance with such standards is voluntary. However, standards can become mandatory when they are referenced or adopted in national legislation and become technical regulations, or NTMs. However, there is no systematic data on the extent to which international standards are made part of national legislation. The question is further complicated by the fact that countries may adopt an entire standard or only parts or may use a standard as the basis for a national standard. This makes it difficult to assess the use of international standards and their overall impact on trade.

To fill this void, ESCAP and UNCTAD (2019) have developed a methodology to assess and compare international standards issued under the three sisters with national regulations. For this purpose, the documents of the three have been classified and coded according to the international classification of NTMs. As expected for standards covering food, animal and plant products, 87 per cent of the relevant provisions are categorized as SPS measures. The remaining 13 per cent are TBT. International standards are codified in the same manner as national regulations (see chapter 3). This enables comparisons with the data on NTMs collected for over 100 countries and the regulatory distance method can therefore be applied (see chapter 8). Mapping the regulatory distance between countries with regard to international standards under the three sisters shows that, in general, developed countries have greater proximity to the standards developed by the international standardization bodies (figure 13). For example, the technical regulations of New Zealand, the Republic of Korea, the United States and the European Union come closest to matching these standards. The extensive involvement of these economies in international standard-setting processes may contribute to this. These economies are also major traders of agricultural goods. The divergence of the technical regulations of other countries from standards under the three sisters is mostly due to underregulation. This may be related to limited technical infrastructure to assess conformity in many developing countries and, therefore, reduced capacity to design and enforce technical regulations.

Regulatory distance mapping can help provide insights on the similarities of the types of NTMs applied by different countries compared with international standards, yet it does not provide information on the detailed contents and level of stringency of national regulations compared with international standards. A regulatory stringency assessment was conducted for case studies of specific products in Bangladesh, the Lao People’s Democratic Republic and Viet Nam (ESCAP and UNCTAD, 2019). The analysis corroborated the finding that, where countries deviate from international standards, they more often have less stringent regulations, or underregulate rather than overregulate. Harmonization with international standards provides opportunities, yet developing countries may face bottlenecks with regard to quality infrastructure and expertise. In this regard, it is important to invest in adequate quality infrastructure and to ensure the active participation of developing countries in international standard-setting processes, especially with regard to their priority sectors.

Figure 13 | Regulatory distance map: Agrifood sectors



Source: ESCAP and UNCTAD, 2019.

Further reading

ESCAP and UNCTAD (2019). *Asia-Pacific Trade and Investment Report 2019: Navigating Non-Tariff Measures Towards Sustainable Development* (United Nations publication. Sales No. E.19.II.F.14. Bangkok).

10. ECONOMY-WIDE EFFECTS: NON-TARIFF MEASURES IN COMPUTABLE GENERAL EQUILIBRIUM MODELS

NTMs have economic, social and environmental effects (see chapter 6). Indexes such as the coverage ratio indicate how intensively trade is regulated through NTMs and the use of AVEs shows how NTMs affect trade costs (see chapters 5 and 7). Computable general equilibrium (CGE) models are a useful instrument in assessing economy-wide effects. They capture interactions in the whole economy by linking sectors through input-output tables and by linking countries through trade flows.

10.1 Advantages of computable general equilibrium models

Econometric models can estimate effects on imports and exports by examining regulatory changes at the sectoral level. However, considering one sector is often insufficient as many firms sell outputs to other firms in other sectors. For example, lowering the import costs of textiles, such as by streamlining NTMs, can make a country's apparel sector more competitive. The use of CGE models takes this into account and provides estimates with regard to many economic variables, such as production, imports, exports, tariff revenues, wages, employment and overall welfare. The value of such models is in providing an understanding of the interplay of different economic forces and in enabling comparisons of the impacts of different policies.

10.2 Non-tariff measures in computable general equilibrium models

The standard Global Trade Analysis Project model is a static, multiregional, multisectoral CGE model widely used to assess the effects of trade policy changes that directly affect prices (Hertel, 1997). It assumes perfect competition and constant returns to scale. More complex versions such as those involving dynamic or monopolistic competition are also available. However, neither the Global Trade Analysis Project model nor other available CGE models are designed to assess complex NTMs.

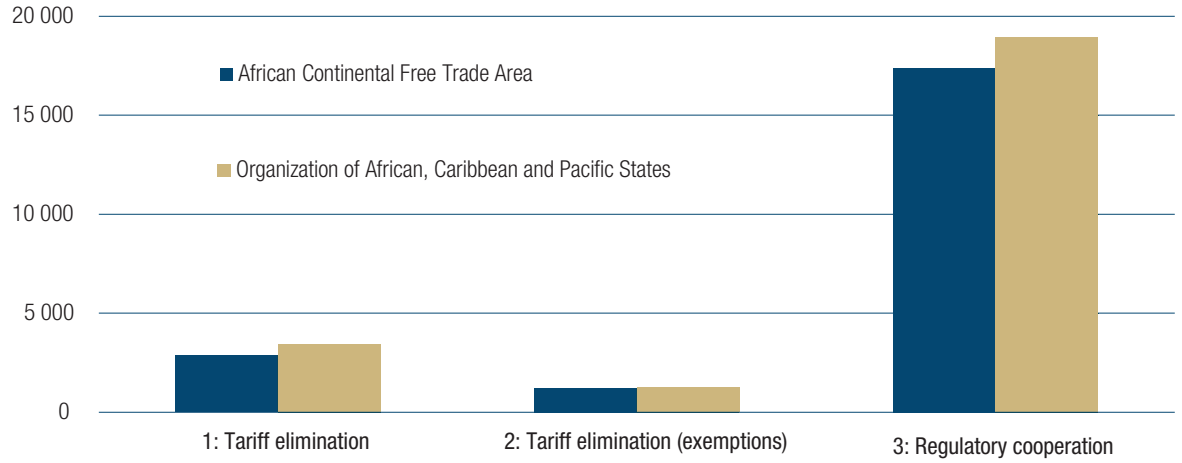
Traditionally, two approaches of feeding NTMs into CGE models have been frequently used (see Walmsley and Strutt, 2021). The most common approach involves treating NTMs as tariffs and the other approach relates to productivity changes, or shocks, applicable when NTMs do not generate revenue or rents for the Government, for example, the use of many SPS measures, TBT and other regulatory measures. Regulatory cooperation through harmonization or mutual recognition can help reduce trade frictions and costs without reducing government revenues. Recent estimates of AVEs allow for distinctions between technical NTMs (SPS measures and TBT) and traditional NTMs (quotas and price measures), often referred to as non-tariff barriers. The latest CGE model approaches have therefore modelled regulatory cooperation on technical measures as productivity shocks and reductions of non-tariff barriers as tariff changes. Both types of changes can be implemented multilaterally or bilaterally depending on whether the barrier or friction affects all countries or whether its effects can be determined bilaterally. The AVEs are fed into the model to create a counterfactual simulation and the differences between the baseline and the simulation reveal the economic impact.

10.3 Results from computable general equilibrium models

Two results may be noted. First, changes in NTMs are likely to have significantly greater effects on the economy than changes in tariffs. For example, a CGE model analysis of deepening regional economic integration under the African Continental Free Trade Area and across the Organization of African, Caribbean and Pacific States under three scenarios shows that the impact of the third scenario, involving NTMs, far outweighs that of the other two scenarios, which involve reducing tariffs only (figure 14).

Second, addressing technical NTMs through streamlining or regulatory cooperation significantly increases welfare gains. For example, a CGE model analysis of deepening regional economic integration in the Economic Community of West African States under three scenarios shows that, since the intraregional market is relatively small, the impacts under the first two, inward-looking, scenarios, are much less significant than that of the third, outward-looking, scenario (figure 15). The third scenario proposes the adoption of international standards and therefore facilitates trade beyond the region and with the rest of the world.

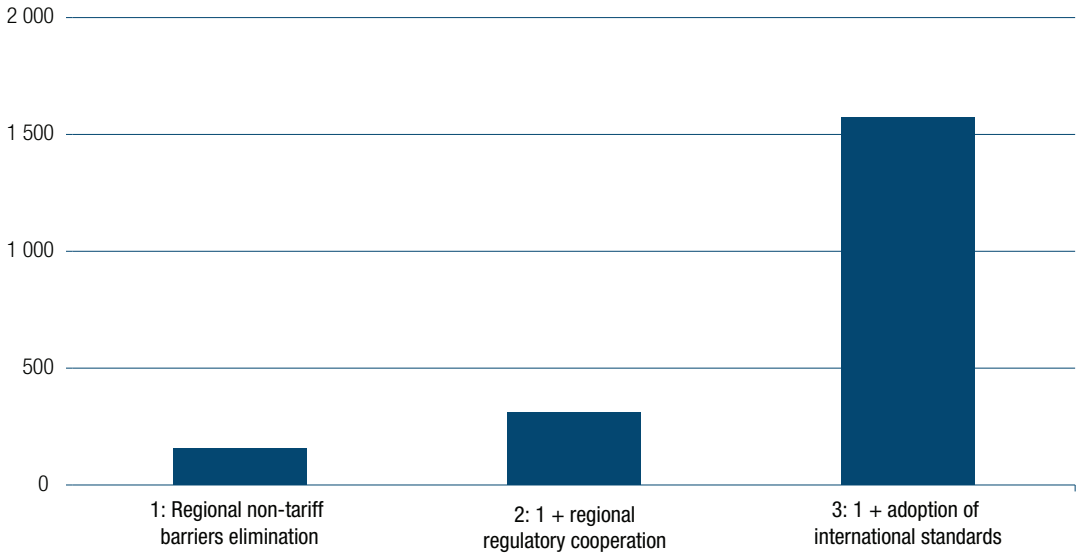
Figure 14 | African Continental Free Trade Area and Organization of African, Caribbean and Pacific States: Welfare gains under different scenarios involving reducing tariffs and addressing non-tariff measures
(Millions of dollars)



Source: Vanzetti, Peters and Knebel, 2017.

Note: The three scenarios simulated the following: scenario 1, full elimination of tariffs within the regions; scenario 2, full elimination of tariffs within the regions, with exemptions; scenario 3, intra-regional reduction of one quarter of the costs associated with SPS measures and TBT through regulatory cooperation and full elimination of traditional barriers, such as quotas.

Figure 15 | Economic Community of West African States: Welfare gains under different regulatory cooperation scenarios
(Millions of dollars)



Source: UNCTAD, 2018.

Note: The three scenarios simulated the following: scenario 1, full elimination of traditional barriers, such as quotas, within the region; scenario 2, full elimination of traditional barriers within the region and, with regard to technical NTMs, strengthening of regulatory convergence within the Economic Community; scenario 3, full elimination of traditional barriers within the region and achievement of regulatory convergence through adoption of international standards, facilitating trade not only within the Economic Community but also with the rest of the world.

CGE model analysis also allows for assessments of the effects on production, consumption and primary factors such as labour, capital and land. For example, Vanzetti, Peters and Knebel (2016) have assessed the potential of stronger regulatory cooperation in the Southern African Development Community, showing that all member States would experience significant income and employment gains. UNCTAD (2017) has assessed the impact of strengthening regulatory cooperation on wages, employment and investment in Mercosur, showing that estimated changes in wage rates and employment for unskilled labour were positive under all scenarios studied. In addition, in the longer term, allowing capital to move between regions can double welfare gains from regulatory cooperation. The impact of changes in NTMs on carbon dioxide emissions can also be analysed using the Global Trade Analysis Project model (UNCTAD, 2021).

10.4 Interpretation of results

CGE models help capture the interactions of sectors within an economy and between regions. They are a useful instrument in assessing the economy-wide effects of regulatory cooperation and the reduction of non-tariff barriers. However, the results depend largely on the assumptions created by the way in which NTMs are introduced into the models, as well as other modelling assumptions. Moreover, the direct benefits of NTMs, often related to public policy objectives, are not captured in such models. The results therefore must be interpreted carefully. Nevertheless, CGE models are a powerful tool in better understanding the complex effects of NTMs.

10.5 Further reading

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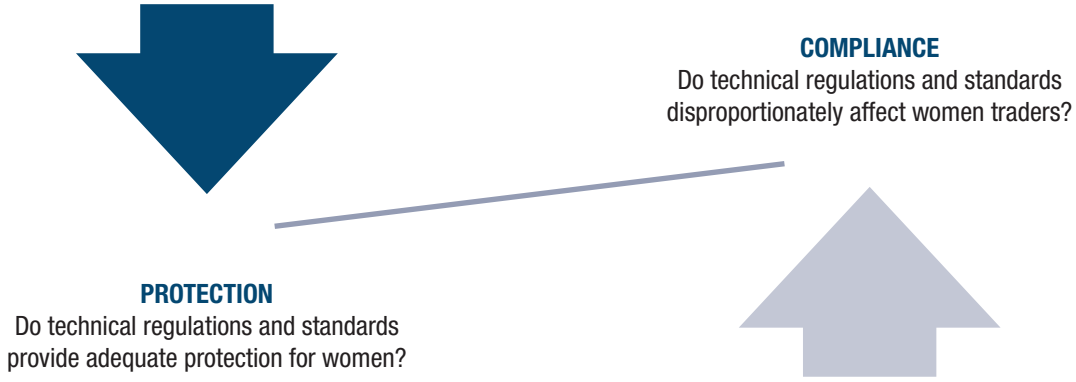
Walmsley T and Strutt A (2021). A comparison of approaches to modelling non-tariff measures. *Journal of Global Economic Analysis*. 6(1).

11. NON-TARIFF MEASURES THROUGH A GENDER LENS

NTMs are considered gender neutral, yet their impact on women and men is not identical. Neither do women and men benefit equally from the levels of protection provided through the use of NTMs. In addition, compliance with NTMs poses different burdens on women and men (figure 16). Research shows that women encounter more barriers in trade than men, putting them at a disadvantage as traders and/or entrepreneurs, as workers and as consumers (UNCTAD, 2022).

Figure 16 | Non-tariff measures and gender: Two-level approach



Source: UNCTAD, 2022.

11.1 Main barriers faced by women as traders and/or entrepreneurs

Women may be unevenly affected by technical regulations because of high compliance costs and due to gendered social structures. Women are disproportionately disadvantaged in opportunities for accessing resources, such as land, capital and adequate infrastructure. NTMs generate fixed costs for trading and are therefore more prohibitive for smaller companies. Compared with firms operated by men, women-operated businesses tend to be smaller, more informal and face limitations in accessing finance. Therefore, such businesses face greater difficulties in complying with NTMs and may be prevented from exploiting lucrative opportunities in accessing international markets. Other important constraints are the uneven shouldering of domestic duties, which limits women's time and abilities, and the lack of skills and expertise, which makes it difficult for women traders to understand and comply with complex sets of technical regulations. In addition, accessing information on NTMs that may be scattered across different institutions poses a challenge for women who lack time, access to training, access to social networks and access to and adequate utilization of the Internet. Moreover, women may also experience higher levels of abuse by market and border officials. Lastly, women are more represented in sectors with a greater incidence of NTMs, such as food, textiles and footwear, implying that women-led businesses exporting products falling under these sectors are likely to be subject to more NTMs.

11.2 Main barriers faced by women as workers

As workers, women may often be exposed to health and safety risks if technical regulations and standards do not provide adequate protection in the workplace. This is mainly because regulations and standards with regard to working gear and personal protective equipment are usually designed with reference to men and women workers may simply be given a smaller size rather than a dedicated design. Such lack of consideration of physical differences can adversely affect the safety of women. Moreover, the sectors in which a major segment of workers are women, such as agriculture, fishing and apparel, are often less regulated, with fewer safety measures to protect the health of workers in the workplace, especially in developing countries and the least developed countries. Examples include the garment industry, in which workers are exposed to high temperatures and harmful chemicals; and the fishing sector in West Africa, in which women specialize in smoking fish, which poses health risks due to long-term exposure to the smoke emitted.

11.3 Main barriers faced by women as consumers

Technical regulations can affect women's health and well-being if they are not gender sensitive. For example, women and men respond differently to pharmaceutical treatments, yet the industry does not generally consider gender-based differences; and technical regulations related to seatbelts may not adequately consider women and, as a result, expose them to more severe injuries in car accidents. Industries that are often inadequately regulated or underregulated, such as cosmetics, in which a large share of consumers are women, could also pose greater risks to women's health and safety. Conversely, a high incidence of NTMs for products generally used by women consumers, such as sanitary towels, tampons, diapers and diaper liners, can reduce women's access to such goods. Such problems arise, among other reasons, because women are often not sufficiently represented in the development of technical regulations and standards.

11.4 Making non-tariff measures gender responsive

Given the main challenges that women face within the context of compliance with NTMs in their different roles, gender mainstreaming requires a multidimensional review of the design of NTMs, the implementation of NTMs and compliance with NTMs, to ensure that women are not disadvantaged, as follows:

- Design: It is important to achieve a higher level of representation of women and gender experts in regulatory and standard-setting institutions, who can adequately assess the impact of relevant regulations on women, and this could also contribute to improved regulation in women-dominated sectors; an example of the development of gender-responsive standards is seen in the women's wear standards developed by the South African Bureau of Standards, which is a signatory to the Declaration for Gender Responsive Standards and Standards Development of the Economic Commission for Europe
- Implementation: To ensure that women are not disproportionately affected, adequate implementation of NTMs may be achieved through capacity-building of relevant government agencies, standard-setting bodies and customs and inspection staff, as well as by employing more women as customs and inspection officers and in positions with decision-making power, which can help to empower women traders
- Compliance: To improve compliance with NTMs, capacity-building focused on areas such as skills development, access to digital technologies, access to trade-related information and public–private dialogues is particularly effective in the context of gender equality, along with targeting gender mainstreaming for women traders and improving their access to finance; in this regard, platforms through which to report complaints of obstacles to trade, including harassment, can support equality if they are easily accessible by women, such as the non-tariff barriers monitoring, reporting and eliminating mechanism under the African Continental Free Trade Area, developed by the African Union with support from UNCTAD

Finally, given that trade policies have different impacts on women and men due to the existence of gendered social structures, it is important that programmes to promote women's compliance with NTMs are not treated in isolation. Capacity-building focused on compliance with NTMs should be implemented together with the development of targeted social policies.

11.5 Further reading

UNCTAD (2022). *Neutral Policies, Uneven Impacts: Non-Tariff Measures Through a Gender Lens* (United Nations publication. New York and Geneva).

12. NON-TARIFF MEASURES AND THE ENVIRONMENT

NTMs often regulate product characteristics, production processes and market access, and therefore play an important role in international and national policy responses in addressing environmental challenges. References to environmental protection are in the international classification of NTMs: chapters A, B, E and L include import-related prohibitions to protect plant and animal health, mandatory licencing for environmental reasons and government support for producers and consumers for environmental protection purposes. About 10 per cent of all measures notified under the Agreement on the Application of SPS Measures and the Agreement on TBT include environmental protection as one of the objectives (UNCTAD, 2016). A similar proportion of all NTMs is directly linked to Sustainable Development Goal 12 (ESCAP and UNCTAD, 2019). Three examples of the work of UNCTAD on NTMs and the environment are provided in this chapter.

12.1 Non-tariff measures and multilateral environmental agreements

The WTO matrix on trade-related measures pursuant to selected multilateral environmental agreements (WTO, 2021) includes 15 international agreements that incorporate provisions to control trade to prevent damage to the environment. These agreements cover a wide range of issues, from endangered species to ozone-depleting substances and transboundary waste management. Their transposition into national law constitutes an important source of NTMs related to the protection of the environment. As part of its transparency initiative, UNCTAD has mapped NTMs under several multilateral environmental agreements. For example, the Stockholm Convention on Persistent Organic Pollutants has 13 NTMs under three chapters of the international classification and directly affects trade in 45 products at the Harmonized System six-digit level (table 5). Measures aimed at controlling the quantity of imported and exported products account for more than half of all NTMs in the Convention. In addition, the inclusion of TBT such as labelling and traceability requirements highlights the importance of technical regulations in environmental protection efforts.

Table 5 | Overview of non-tariff measures included in Stockholm Convention on Persistent Organic Pollutants

Chapter		Types of measures	Number of measures
B	TBT	Labelling requirements	1
		Traceability requirements (including distribution and location of products after delivery)	2
E	Quantitative restrictions	Quantity-control measures	3
P	Export-related measures	Export-related conformity assessment measures (including certification by exporting country)	3
		Quantitative export restrictions	4

Source: UNCTAD.

12.2 Non-tariff measures and fisheries

The import ban instituted by the European Union on seafood from Sri Lanka, due to systematic failures to address illegal, unreported and unregulated fishing, is an example of the impact of NTMs related to the environment on exporting countries. ESCAP and UNCTAD (2019) have explored the performance of the seafood export industry in Sri Lanka before, during and after the ban was instituted. The European Union was the largest export market for seafood from Sri Lanka and the ban led to a sharp fall in wholesale prices of fish in the country. In addition, the number of employment opportunities in offshore fisheries decreased by 10 per cent and the household expenditures of fishers, by 31 per cent, with many having to mortgage their properties. In response, the Government of Sri Lanka instituted a number of domestic technical regulations that had positive effects on sustainability. In 2017, the relevant authorities in the fisheries sector achieved an 82 per cent compliance rate with Indian Ocean Tuna Commission standards. In addition, through the use of a vessel monitoring system, awareness programmes for fishers and boat inspections in harbours and at sea, the movement of fishers to

foreign sea territories and the rate of fishers arrested in foreign countries were reduced by as much as 85 per cent. The vessel monitoring system not only increased the prevention of illegal, unreported and unregulated fishing, but also reduced risks to fishers, as they were able to use it to obtain weather information and fishing ground forecasting and to make distress calls. This example shows that introducing NTMs related to the environment in major import markets can trigger the adoption of sustainable production practices in exporting countries and that such requirements can have a mixed socioeconomic impact.

12.3 Non-tariff measures and the curbing of plastic pollution

An increasing number of countries have been introducing NTMs to prevent the use of certain plastics and ensure the sustainable management of plastic waste. One of the most-adopted measures, particularly in Africa, has been the introduction of bans on plastic bags (United Nations Environment Programme, 2018). For example, in 2017, Kenya introduced a ban on plastic bag production, trade and use. This is an example of a stringent method of addressing single-use plastics in Africa. With hefty fines and possible imprisonment for contraveners, the ban led to a quick reduction in plastic waste. This came, however, at a significant cost; Kenya was a major plastic producer and exporter in the region, with 176 plastic-producing companies, and the ban led to an estimated loss of up to 60,000 jobs (ESCAP and UNCTAD, 2019). Moreover, following the ban, illegal imports from neighbouring countries began to appear, and the Government of Kenya urged its neighbours to introduce similar measures to address plastic pollution. This highlights the need for regional cooperation in the field of NTMs related to the environment.

12.4 Useful websites

WTO (2021). Matrix on trade-related measures pursuant to selected multilateral environmental agreements. Available at https://www.wto.org/english/tratop_e/envir_e/envir_matrix_e.htm.

12.5 Further reading

ESCAP and UNCTAD (2019). *Asia-Pacific Trade and Investment Report 2019: Navigating Non-Tariff Measures Towards Sustainable Development* (United Nations publication. Sales No. E.19.II.F.14. Bangkok).

Fugazza M (2017). Fish trade and policy: A primer on non-tariff measures. Research Paper No. 7. UNCTAD.

UNCTAD (2016). *Trading into Sustainable Development: Trade, Market Access and the Sustainable Development Goals* (United Nations publication. New York and Geneva).

United Nations Environment Programme (2018). *Single-use Plastics: A Road Map for Sustainability* (Nairobi).

13. NON-TARIFF MEASURES DURING THE PANDEMIC

From January 2020 to August 2021, over 145 countries introduced approximately 440 trade-related measures in response to the coronavirus disease (COVID-19) pandemic, of which 27 per cent were tariff measures and 73 per cent were NTMs. While most tariff-related changes were trade facilitating, newly imposed NTMs were more often trade restricting (figure 17).

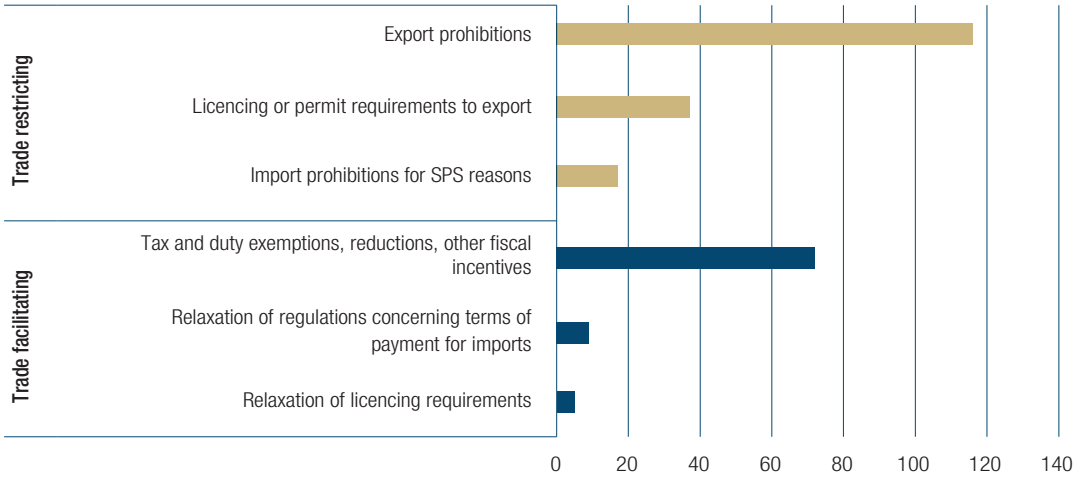
Figure 17 | Pandemic-related trade measures

Source: Lee and Prabhakar, 2021.

13.1 Types of non-tariff measures imposed during the pandemic

The most frequently used types of NTMs were export prohibitions (P31), followed by other trade-restricting measures such as licencing, permit or registration requirements to export (P33) and prohibitions of imports for SPS reasons (A11). However, countries also put in place trade-facilitating measures such as tax and duty exemptions, reductions or other fiscal incentives (L41), the relaxation of regulations concerning terms of payment for imports (G4) and the relaxation of licencing requirements (E125) (figure 18).

Figure 18 | Frequently used non-tariff measures

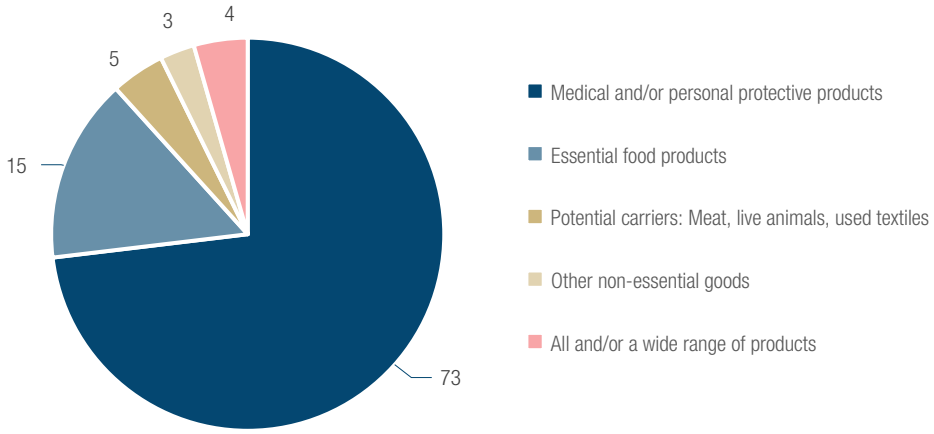


Source: Lee and Prabhakar, 2021.

13.2 Products affected and regulatory objectives

The two main targets of NTMs were medical and personal protective products, accounting for 73 per cent of affected products, and essential food products, accounting for 15 per cent (figure 19). This reflects the main objective of countries in using NTMs, namely, to ensure domestic supplies of essential goods, to be achieved by curbing exports and promoting imports in these two product groups. Other objectives were to minimize virus transmission and ensure product quality and safety (figure 20).

Figure 19 | Product groups targeted by non-tariff measures



Source: Lee and Prabhakar, 2021.

Figure 20 | Objectives of non-tariff measures

Source: Lee and Prabhakar, 2021.

Most NTMs are designed to be temporary, yet more than half of the newly introduced NTMs were reported to be still in force in August 2021. Although temporary measures may inevitably be required to quickly and flexibly address an emergency situation, they should also be targeted, proportionate, transparent and consistent with rules under WTO. It is important to keep trade flows open and supply chains running, as well as to prevent measures from creating unnecessary barriers to trade (see UNCTAD, 2021).

13.3 Useful websites

UNCTAD (2021). COVID-19 and NTMs. Available at https://unctad.org/topic/trade-analysis/non-tariff-measures/covid-19-and-ntms.

13.4 Further reading

Lee S and Prabhakar D (2021). COVID-19 non-tariff measures: The good and the bad, through a sustainable development lens. Research Paper No. 60. UNCTAD.

UNCTAD (2021). The Bridgetown Covenant: From inequality and vulnerability to prosperity for all. TD/541/Add.2. Geneva. 10 November.

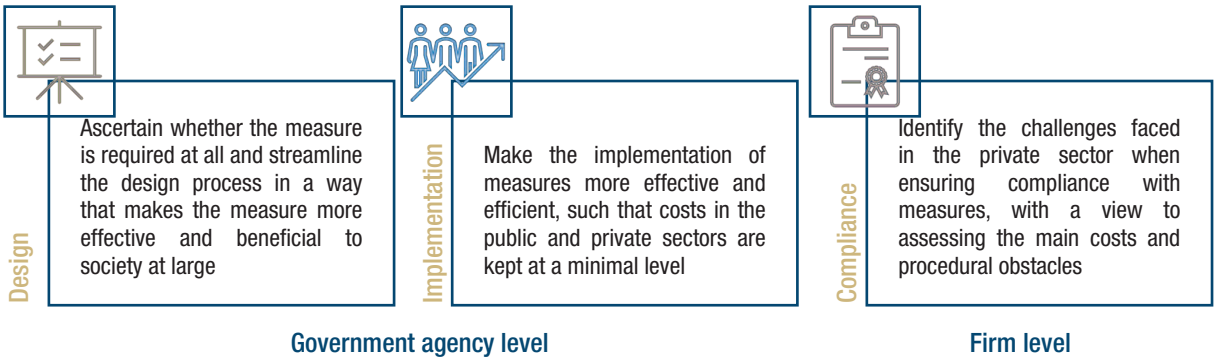
14. A TOOLKIT TO ASSESS THE COST EFFECTIVENESS OF NON-TARIFF MEASURES

Businesses increasingly need to comply with numerous procedures and requirements when importing and exporting. Such NTMs can unduly increase the cost of doing business. Poorly designed and inefficiently implemented NTMs impose administrative and financial burdens on both Governments and the private sector. This may negatively impact international trade and consumers in the form of higher product prices. The willingness of Governments to streamline NTMs, to facilitate trade and reduce business costs, has gained traction. However, there are two sides to this coin, namely, NTMs entail implementation and compliance costs, yet are usually necessary in achieving economic, social and other policy goals. It is crucial to achieve a balance between the costs of NTMs and the regulatory benefits.

14.1 Non-tariff measures cost-effectiveness toolkit

The toolkit is designed to provide policymakers with a framework to help find the balance between costs and benefits, and includes tools and templates, with three key pillars of review (figure 21). Use of the toolkit relies on active engagement with stakeholders that need to comply with NTMs and oversee their day-to-day implementation. The goal is to streamline NTMs to achieve public policy objectives at the lowest possible cost. The toolkit targets the review of NTMs applied to a single intermediate input in a value chain or sector of national economic and political interest and can be extended to several sectors. The aim is to increase competitiveness and value addition in the identified sector as well as to lead to the creation of regional value chains. The toolkit incorporates an integrated view, considering all NTMs applied simultaneously on reviewed products and the way in which they are implemented and complied with.

Figure 21 | Non-tariff measures cost-effectiveness toolkit: Key pillars of review

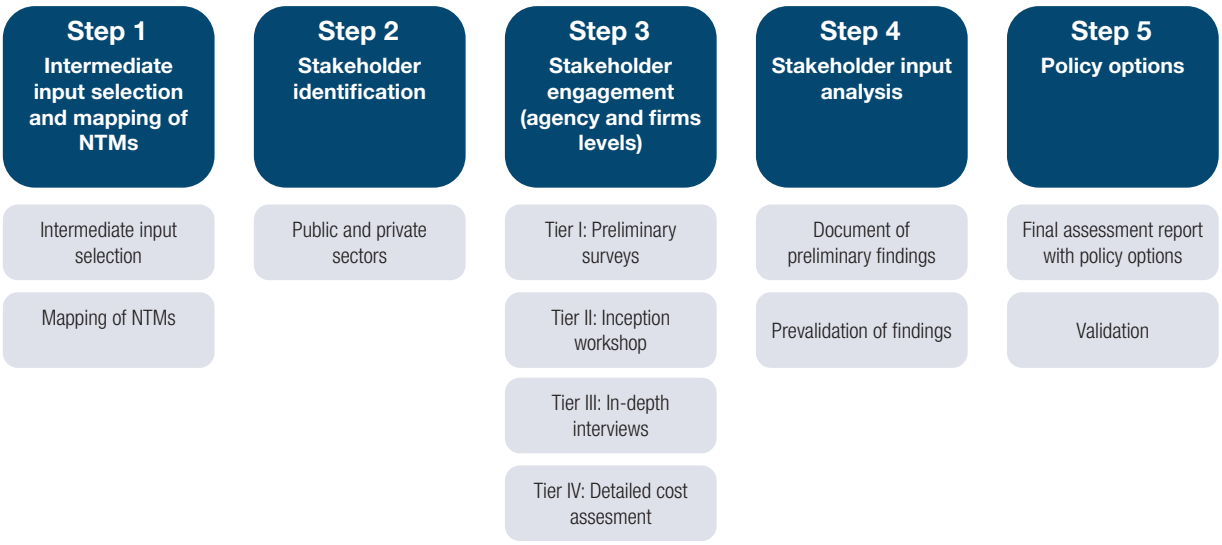


Source: UNCTAD, 2020a.

14.2 Non-tariff measures cost-effectiveness toolkit: Five-step approach

The toolkit follows a five-step approach to reviewing NTMs, as follows: conduct a value chain assessment to identify imported intermediate inputs within a value chain of interest and map the applicable NTMs using the TRAINS database; identify key stakeholders, that is, government agencies responsible for designing and enforcing the NTMs under consideration, regulated firms and other relevant government agencies; engage with these stakeholders through focus group discussions, in-depth interviews, surveys and detailed cost assessments of compliance and implementation; synthesize and analyse these discussions to identify issues and challenges with regard to compliance, design and implementation; and generate policy options to address the identified problems, to drive reform (figure 22). For these steps, the following tools are provided: sample survey; in-depth interview guidelines; focus group discussion guidelines; detailed cost assessment spreadsheet; potential approaches to analysing stakeholder input; and ways of generating suitable policy options. On average, implementation should take between 4 and 12 months, depending on the number of products, number of NTMs and number of firms and/or agencies to be interviewed.

Figure 22 | Non-tariff measures cost-effectiveness toolkit: Five-step approach to deployment



Source: UNCTAD, 2020a.

14.3 Expected results

The toolkit guides users towards well-designed NTMs that meet economic and non-economic policy objectives, while minimizing the burden on the private sector. The participatory multi-stakeholder process of generating policy recommendations paves the way for the implementation of reforms and a broader application of good regulatory practices. Overall, the design of the toolkit is flexible and users are free to adapt it based on their needs, available time and budgets and political interests. Strong political commitment and active stakeholder engagement are the two lynchpins of the toolkit.

14.4 Further reading

UNCTAD (2020a). Assessing cost effectiveness of non-tariff measures: A toolkit. Available at https://unctad.org/webflyer/assessing-cost-effectiveness-non-tariff-measures-toolkit.

UNCTAD (2020b). Assessing cost effectiveness of non-tariff measures: A toolkit – A case study in Kenya. Available at https://unctad.org/webflyer/assessing-cost-effectiveness-non-tariff-measures-Kenya.

15. CAPACITY-BUILDING AND UNCTAD ONLINE ACADEMY ON NON-TARIFF MEASURES

UNCTAD offers various online courses on NTMs, as well as face-to-face training sessions tailored to different audiences, including government officials, traders, researchers and the general public.

The online academy on non-tariff measures covers several topics, as follows:

- Executive course on NTMs, providing a concise starting point for obtaining knowledge on NTMs and an overview of UNCTAD work on the topic
- Data collection on NTMs, aimed at providing understanding of the international classification and the collection of data on NTMs
- Economic analysis of NTMs, providing econometric tools needed to assess the impact of NTMs on trade and welfare
- NTMs and the pandemic, providing knowledge and suggesting policy coordination and action plans for Governments to address the pandemic and assist the global economic recovery; offered in English and Spanish in collaboration with the Latin American Integration Association
- Courses developed and tutored in partnership with ESCAP, including on NTMs and sustainable development and on the negotiation of regional trade agreements in times of crisis and pandemic

Most stakeholders from the public and private sectors can benefit from the executive course, which provides an introduction to NTMs, the implications for law-making and negotiations and the support available from UNCTAD. The course on data collection on NTMs provides the knowledge necessary for Governments and analysts to increase regulatory transparency. Researchers can strengthen their expertise in the quantitative analysis of NTMs and their impacts on trade through the course on economic analysis of NTMs.

UNCTAD frequently responds to requests from Governments for tailored courses on NTMs and related topics. UNCTAD experts on NTMs have organized face-to-face training sessions for Governments worldwide as part of various projects. In recent years, UNCTAD has provided capacity-building in island States in the Pacific and in member States of the African Continental Free Trade Area, ASEAN, the Eurasian Economic Community, the Latin American Integration Association and the Southern African Development Community.

Courses are offered at irregular intervals. To receive alerts of upcoming courses, interested stakeholders can express their interest by sending an email to ntm.training@unctad.org.

Useful websites

UNCTAD (2021). UNCTAD electronic learning on trade. Available at https://elearningtrade.unctad.org.

unctad.org/tab

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