

# ASIA-PACIFIC TRADE AND INVESTMENT REPORT 2019

## *Navigating Non-tariff Measures towards Sustainable Development*



United Nations  
Economic and Social Commission  
for Asia and the Pacific

UNITED NATIONS

United Nations Conference on  
Trade and Development



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United Nations publication  
Sales No. E.19.II.F.14  
Copyright © United Nations 2019  
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ISBN: 978-92-1-120795-8  
e-ISBN: 978-92-1-004483-7  
Print ISSN: 2522-2597  
eISSN: 2221-500X  
ST/ESCAP/2869

Reference to dollars (\$) are to United States dollars unless otherwise stated.

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## FOREWORD

Fuelled by legitimate public policy concerns, as well as ongoing trade tensions, the number of non-tariff measures (NTMs) has risen significantly. While NTMs often serve important public policy objectives linked to sustainable development, the trade costs associated with NTMs are estimated to be more than double that of tariffs. As such, they have become a key concern for traders as well as for trade policymakers aiming to ensure that trade can continue to be an effective *Means of Implementation* of the 2030 Agenda for Sustainable Development.

In this year's Asia-Pacific Trade and Investment Report, the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) has joined hands with the United Nations Conference on Trade and Development (UNCTAD) in examining the links between NTMs and sustainable development, the impact of NTMs in Asia and the Pacific, and how to best navigate NTMs towards sustainable development, building on good practices at the national, regional, and multilateral levels. The Report builds on a multi-year cooperation initiative in this area between ESCAP and UNCTAD, during which our two organizations have collaborated to support data collection in several Asian countries as a basis for evidence-based policymaking.

The Report shows that, based on their intended public policy objectives, almost half of the NTMs in Asia and the Pacific directly and positively address the Sustainable Development Goals (SDGs) such as, for example, those on health, safety and the environment. However, they also add 15% to the price of imports, and can also have a significant impact on investment. Data from private sector surveys suggest that domestic procedural obstacles are the primary reason why NTMs are difficult to comply with by traders. As such, the key is to ensure that, while public policy objectives and SDGs are met, traders are not unnecessary burdened, and trade costs are minimized.

To address trade costs while maintaining the benefits of NTMs, countries need to further enhance cooperation at all levels, as suggested in this Report. At the multilateral level, WTO agreements on sanitary and phytosanitary (SPS) measures, technical barriers to trade (TBTs) and Trade Facilitation should be fully implemented, while international standards that are adapted to countries at different levels of development should be developed and adopted. Regional initiatives should also be actively pursued, such as NTM harmonization and mutual recognition initiatives in regional trade agreements. Digitalization of NTM-related procedures should also be prioritized, as already envisaged under the ASEAN Single Window Agreement and the broader Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific. At the national level, new and existing NTMs and related procedures should be systematically subjected to sustainability impact assessments; this should include effective consultations with the private sector and stakeholders with special needs, including SMEs and women.

We believe that this Report will help policymakers in their ongoing quest for trade and investment policies that support the implementation of sustainable development as well as encourage the donor community to provide more capacity-building and technical assistance to member States. ESCAP and UNCTAD will continue to work hand-in-hand in this area, together with other relevant partners.



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and Social Commission for Asia and the Pacific



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## ACKNOWLEDGEMENTS

The Asia-Pacific Trade and Investment Report (APTIR) 2019: Navigating Non-tariff Measure towards Sustainable Development was prepared under the overall guidance of Mia Mikic, Director, Trade, Investment and Innovation Division (TIID) of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), and Pamela Coke-Hamilton, Director, Division on International Trade and Commodities of the United Nations Conference on Trade and Development (UNCTAD).

Under the joint substantive direction of Yann Duval and Mia Mikic, the core team of ESCAP authors included the following TIID staff: Alexey Kravchenko (Introduction, chapters 1, 2 and 4); Yann Duval (chapter 4); Heather Lynne Taylor-Strauss (chapter 2). Chapter 2 includes highlights of a joint ESCAP/ITC report *Company Perspectives on Non-tariff Measures in Asia-Pacific*. Marc Proksch and Yuhua Zhang contributed significant inputs to chapter 2 and Introduction, respectively. Badri Narayan and Chorthip Utoktham, ESCAP consultants, also contributed to the impact analyses presented in chapter 2. Maria Semenova, ESCAP consultant, contributed significantly to the analysis of the relationship between non-tariff measures and the Sustainable Development Goals (chapter 1). Douglas Brooks, ESCAP consultant, drafted recommendations and way forward (chapter 4). Several ESCAP interns and consultants including, Danijel Bajt, Jeong Ho Yoo, Jhanvi Trivedi and Jiayi He, provided research assistance for underlying research used in the Report. Under the substantive direction of Bonapas Onguglo and Ralf Peters, the core team of UNCTAD authors were Christian Knebel, Seul Lee, Ralf Peters and Samuel Rosenow (chapter 3). Narmin Khalilova, UNCTAD consultant, contributed to chapter 3 and developed the methodology to code the “three sisters” international standards. Shyamala Sethuram and Santiago Teperino Lopez, UNCTAD consultants, supported coding, and Fabien Dumesnil and Denise Penello Rial, UNCTAD, worked on data and descriptive indicators. National consultants for stringency case studies analyses included Saleh Ahmed, Thiphaphone Phetmany and Pham Thi Huyen Trang.

The Report benefited greatly from feedback and suggestions received during the Expert Group Meeting on “Navigating Non-Tariff Measures toward Sustainable Development”, 11-12 July 2019, Bangkok, organized by Witada Anukoonwattaka, from the following discussants (in order of presentations): Arun Jacob, Durai Raj Kumarasamy, Ravi Khetarpal, Watcharas Leelawat, Jose Elias Duran Lima, Marcelo Dolabella, John Gilbert, Sufian Jusoh, Javier Lopez Gonzalez, Nimal Aluthgama Gamladdalage Karunathilake, Allwyn Netto, Ernawati Munadi, Simon Lacey and Mary Elizabeth Chelliah. Further feedback and suggestions on the draft Report were provided by other Meeting participants, including (in alphabetical order) Mitsuyo Ando, Sebastian Castresana, Nakgyoon Choi, Krizia Anne Villanueva Garay, Tony Irawan, Janine Elora Muriel Lazatin, Yao Amber Li, Palisa Lertpokin, Vu Hoang Nam, Hay Man Thein Oo, Chandarany Ouch, Gloria Pasadilla, Dini Sejko, Wan So, Duangmon Sooksmarn, Vilavong Southanilaxay, Viengsavang Thipphavong and Nobuaki Yamashita. Statistics and research on non-tariff measures and the Sustainable Development Goals by ESCAP and UNCTAD benefited from the United Nations Development Account Programme on Statistics and Data (10<sup>th</sup> tranche) and the Expert Group Meeting on “Indicators to monitor the impact of NTMs on SDG progress”, 31 May–1 June 2017, Bangkok, with member States. The report further benefited from review and suggestions by Natia Abzianidze, Belinda Cleeland, Noelia Garcia Nebra, Alessandro Nicita, Melvin Spreij and Senal Weerasooriya.

Robert Oliver edited this Report, while Witada Anukoonwattaka and Charuwan Chongsathien of TIID performed final checks and supervised the printing of the report. The graphic concept, design and layout were carried out by Erawan Printing. The Strategic Communications and Advocacy Section collaborated in disseminating and communicating the APTIR findings through media outlets, while Vasan Narang assisted with arrangements for timely online publication and ensuring that the Report is accessible by readers worldwide.



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## ABBREVIATIONS AND ACRONYMS

|        |                                                                        |
|--------|------------------------------------------------------------------------|
| ADB    | Asian Development Bank                                                 |
| AEC    | ASEAN Economic Community                                               |
| AEO    | Authorized Economic Operators                                          |
| APEC   | Asia-Pacific Economic Cooperation                                      |
| APTA   | Asia-Pacific Trade Agreement                                           |
| APTIR  | Asia-Pacific Trade and Investment Report                               |
| ASEAN  | Association of Southeast Asian Nations                                 |
| AVE    | ad valorem tariff equivalent                                           |
| BSTI   | Bangladesh Standard and Testing Institute                              |
| CGE    | computable general equilibrium                                         |
| CPTPP  | Comprehensive and Progressive Trans-Pacific Partnership                |
| DCFTA  | Deep and Comprehensive Free Trade Area                                 |
| EAEU   | Eurasian Economic Union                                                |
| ERIA   | Economic Research Institute for ASEAN and East Asia                    |
| ESCAP  | United Nations Economic and Social Commission for Asia and the Pacific |
| FAO    | Food and Agriculture Organization of the United Nations                |
| FDI    | foreign direct investment                                              |
| FTA    | free trade agreement                                                   |
| GATT   | General Agreement on Tariffs and Trade                                 |
| GDP    | gross domestic product                                                 |
| GeNS   | generic ePhyto national system                                         |
| GNP    | gross national product                                                 |
| GRP    | good regulatory practice                                               |
| GTAP   | Global Trade Analysis Project                                          |
| GVC    | global value chain                                                     |
| HACCP  | Hazard Analysis and Critical Control Point                             |
| HS     | harmonized system                                                      |
| ICNTM  | International Classification of Non-Tariff Measures                    |
| ICRIER | Indian Council for Research on International Economic Relations        |
| ICT    | information and communications technology                              |
| IEC    | International Electrotechnical Commission                              |
| IMF    | International Monetary Fund                                            |
| IPPC   | International Plant Protection Convention                              |
| IPRs   | intellectual property rights                                           |
| ISBs   | international standardizing bodies                                     |
| ISO    | International Organization for Standardization                         |
| ITC    | International Trade Centre                                             |
| ITU    | International Telecommunication Union                                  |
| IUU    | illegal, unreported and unregulated                                    |

|        |                                                                                             |
|--------|---------------------------------------------------------------------------------------------|
| LCRs   | local content requirements                                                                  |
| LDCs   | least developed countries                                                                   |
| MAST   | Multi-Agency Support Team                                                                   |
| MRAs   | mutual recognition arrangements                                                             |
| MSME   | micro, small and medium-sized enterprise                                                    |
| NPPOs  | National Plant Protection Organizations                                                     |
| NTBs   | non-tariff barriers                                                                         |
| NTM    | non-tariff measure                                                                          |
| NTRs   | national trade repositories                                                                 |
| OECD   | Organisation for Economic Co-operation and Development                                      |
| OIE    | World Organisation for Animal Health                                                        |
| PACER  | Pacific Agreement on Closer Economic Relations                                              |
| Psa    | <i>Pseudomonas syringae</i> pv. <i>Actinidiae</i>                                           |
| R&D    | research and development                                                                    |
| RoW    | rest of the world                                                                           |
| RTAs   | regional trade agreements                                                                   |
| SAARC  | South Asian Association for Regional Cooperation                                            |
| SASEC  | South Asia Subregional Economic Cooperation                                                 |
| SDGs   | Sustainable Development Goals                                                               |
| SMEs   | small and medium-sized enterprises                                                          |
| SPS    | sanitary and phytosanitary                                                                  |
| STDF   | Standards and Trade Development Facility                                                    |
| STRI   | Services Trade Restrictiveness Index                                                        |
| TBT    | technical barrier to trade                                                                  |
| TFA    | Trade Facilitation Agreement                                                                |
| TRAINS | Trade Analysis Information System                                                           |
| TRIPS  | Agreement on Trade-Related Aspects of Intellectual Property Rights                          |
| UNCTAD | United Nations Conference on Trade and Development                                          |
| UNECE  | United Nations Economic Commission for Europe                                               |
| UNEP   | United Nations Environment Programme                                                        |
| UNFSS  | United Nations Forum on Sustainability Standards                                            |
| UNIDO  | United Nations Industrial Development Organization                                          |
| UNNEXt | United Nations Network of Experts for Paperless Trade and Transport in Asia and the Pacific |
| UNODC  | United Nations Office on Drugs and Crime                                                    |
| UNSD   | United Nations Statistics Division                                                          |
| VSS    | voluntary sustainability standards                                                          |
| WEF    | World Economic Forum                                                                        |
| WITS   | World Integrated Trade Solution                                                             |
| WTO    | World Trade Organization                                                                    |



## EXECUTIVE SUMMARY

During the past two decades, thanks to multilateral and regional trade agreements (RTAs) as well as unilateral efforts, applied tariffs in the Asia-Pacific region have been halved. At the same time, the number of non-tariff measures (NTMs), including sanitary and phytosanitary (SPS) measures and technical barriers to trade (TBTs), has risen significantly. NTMs often serve legitimate and important public policy objectives, but their trade costs are estimated to be more than double that of ordinary customs tariffs. The economic cost of SPS and TBT measures is estimated to be up to 1.6% of global gross domestic product, amounting to \$1.4 trillion. As such, they have become a key concern for traders as well as for trade policymakers aiming to ensure that trade can continue to support sustainable development.

*“Trade costs of NTMs are more than double that of ordinary customs tariffs.”*

This year’s Asia-Pacific Trade and Investment Report provides an overview of NTM trends and developments in Asia and the Pacific. It explores how NTMs relate to the Sustainable Development Goals (SDGs). This is followed by a discussion of the impacts of NTMs on trade and investment, together with a private sector perspective outlining the difficulties posed by NTMs and related procedural obstacles. The importance of aligning NTMs with international standards as one way to bring down trade costs of NTMs, as well as other policy recommendations and good practices on streamlining NTMs towards sustainable development are discussed.

*“NTMs are not inherently good or bad – they add to trade costs, but can be important instruments in achieving SDGs, and can even promote trade.”*

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. The universe of NTMs is diverse. While SPS and TBT measures account for the bulk of measures, it includes policies such as licensing, subsidies, distribution restrictions, quotas, prohibitions, excise taxes and so on. NTMs as policy instruments are not inherently good or bad. They often serve important purposes, such as protection of human, animal and plant health or, protection of the environment, and can therefore help achieve the 2030 Agenda for Sustainable Development. Failure to have essential technical NTMs in place, or their poor implementation, may have serious detrimental impacts (e.g., the spread of diseases such as the African swine fever in parts of the region). Technical NTMs can also boost demand and trade under certain conditions. At the same time, a key characteristic of NTMs is that they usually generate costs for producers and traders, potentially inhibiting international trade. NTMs are usually more complex, less transparent and more difficult to monitor than tariffs, and are sometimes used by Governments with a protectionist intent, rendering them non-tariff barriers – NTBs.

*“In Asia and the Pacific in 2018 the number of new technical NTMs notified to WTO reached 1,360 measures – a 15% year-on-year increase.”*

On average, each imported product in Asia and the Pacific faces 2.5 NTMs, and 57% of imports are affected by at least one NTM. The number of new or updated SPS and TBT measures initiated globally and notified to the World Trade Organization (WTO) in 2018 reached 3,466 – a 16% increase from the previous year. In Asia and the Pacific, the number of new initiations reached 1,360 measures – a 15% year-on-year increase. In comparison, in 2007, globally 1,875 SPS and TBT measures were initiated, and 522 in Asia and the Pacific.

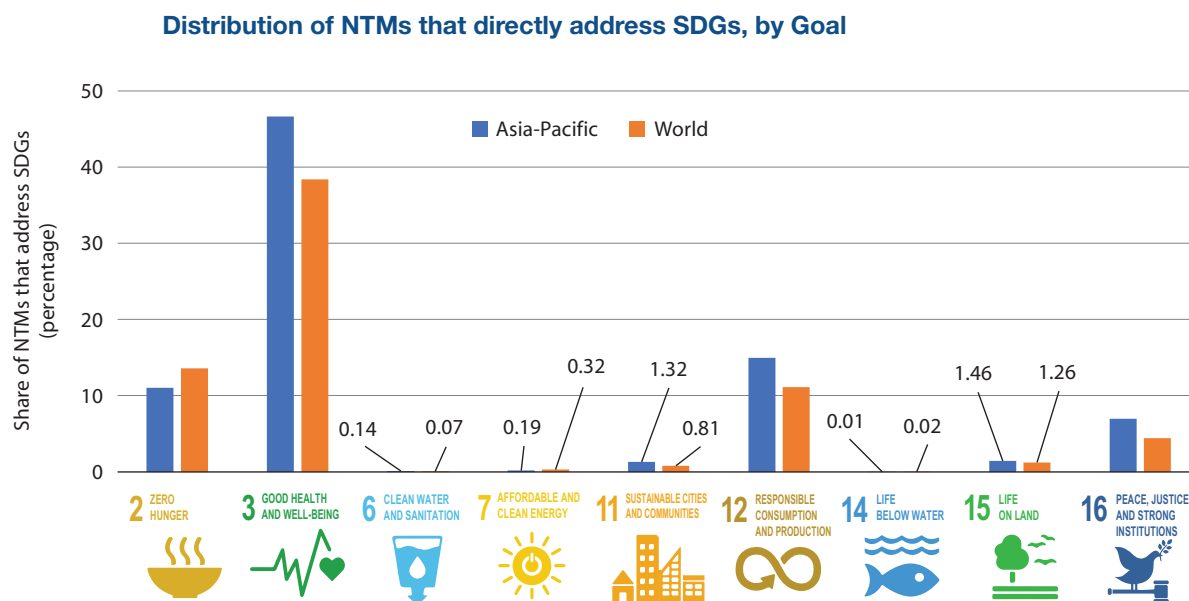
It is generally agreed that this increase is due to the efforts of developing countries to improve their technical, sanitary and phytosanitary regulatory frameworks; in contrast, annual notifications by developed economies have remained fairly constant across the years.

**“NTMs have a multifaceted effect on sustainable development through direct and indirect impacts.”**

The 2030 Agenda for Sustainable Development recognizes international trade as an engine for inclusive economic growth and poverty reduction, and an important enabler to achieve SDGs. Trade is strongly linked to the Goals related to health and safety, the environment and climate, public security and peace. As such, broadly speaking, NTMs can directly contribute to sustainable development as policy instruments, or they can indirectly affect sustainable development through their impact on trade and investment.

**“Almost half of NTMs in Asia and the Pacific directly address SDGs.”**

The analysis presented in this report shows that almost half of NTMs in Asia and the Pacific directly address SDGs. The highest share of SDG-related NTMs in the Asia-Pacific region and globally directly address Goal 3 (Good Health and Well-being) (see the following figure). NTMs that address this Goal include regulation of medicines, food safety, technical regulations on vehicle safety, and regulations on trade, and packaging of alcohol and tobacco products. NTMs that arise due to international agreements (such as the Montreal Protocol on Substances that Deplete the Ozone Layer) and address Goal 12 (Responsible Consumption and Production) are also prevalent, highlighting the need for international collaboration to achieve SDGs.



**“Only 10% of the economies in Asia and the Pacific have NTMs addressing illegal, unreported and unregulated fishing and illegal timber trade.”**

While other Goals are addressed by relatively fewer NTMs, they are nonetheless important for sustainable development. However, the analysis indicates that some SDG targets remain unaddressed by trade regulations. For example, approximately only 10% of the economies in Asia and the Pacific have at least one NTM addressing illegal, unreported and unregulated (IUU) fishing and illegal timber trade. As such, there

seems to be more scope for member States in the region to address these aspects of sustainable development through trade measures.

*“Well-intentioned NTM regulation addressing one dimension of sustainable development may inadvertently, negatively and severely affect other dimensions.”*

Many NTMs were found to have no direct linkages to SDGs. This is not to say that they lack public policy objectives. For example, while motor vehicle safety can be linked to reducing traffic accident fatalities, safety of consumer and commercial products cannot be directly linked to any SDG target. Taking a gender focus as another example, NTMs aimed at controlling and reducing the use of alcohol and narcotics can also reduce violence against girls and women (SDG Target 5.2). Many, if not most, NTMs affect a number of SDGs simultaneously. In some cases, well-intentioned NTM regulations addressing one dimension of sustainable development may inadvertently, negatively and severely affect other dimensions. As such, detailed sustainability impact assessments at the country and sector levels are recommended in order to draw accurate conclusions for each new or existing NTM.

*“The average trade costs of NTMs in the Asia-Pacific region are 15.3%, which is higher than those in the United States and the European Union.”*

While NTMs often serve legitimate and necessary purposes, they add costs to trade. It is estimated that the average combined cost of all NTMs for imports is 15.3% in Asia and the Pacific, whereas tariffs account only for 5.8%. In the agricultural and automotive sectors, the combined costs of NTMs are up to 20% for imports. While the United States and the European Union have more NTMs in place, costs related to NTMs are higher in Asia and the Pacific, suggesting that the design or the implementation of NTMs in the Asia-Pacific region is less efficient.

*“High average regulatory distances among economies in Asia and the Pacific strongly puts forward a case for regulatory cooperation.”*

Trade costs related to NTMs increase with the divergence of measures in different countries, affecting small and medium-sized enterprises (SMEs), and smaller and lower income countries disproportionately. An analysis of the similarity of NTMs between economies suggests that regulations may be less harmonized among the economies of the Asia-Pacific region than globally. The lowest average regulatory distance within the Asia-Pacific subregions is in North and Central Asia, in large part due to the Eurasian Economic Union's efforts at harmonization. When comparing NTM regulations with trade partners beyond the region, similarity is significantly lower with the United States than with the European Union. Regulatory distance for measures that were identified as having a direct and positive impact on SDGs is slightly higher than for all measures. Most notable, however, the regulatory distance of SDG-related NTMs within Asia and the Pacific is significantly higher than the distance between that region and the European Union and the United States. Particular efforts may be needed to harmonize NTM regulations that support sustainable development in the Asia-Pacific region with those of major trade partners outside the region.

*“NTMs have a positive impact on FDI, on average, but detailed case-by-case impact assessments need to be carried out.”*

Through their effects on imports, NTMs may indirectly affect inward foreign direct investment (FDI). Overall, the analysis suggests that increasing the average number of NTMs applied to a product by one (i.e., from 2.5 to 3.5 NTM per product) could boost FDI by 12%. Case study analyses confirm that certain NTMs, such as intellectual property rights, local content requirements and TBTs in selected sectors, seemingly have

a significant impact on FDI. This could prove increasingly relevant to policymakers aiming to generate investment in key SDG sectors. At the same time, a potentially positive effect of NTMs on FDI may be offset by the negative effect on trade; hence, these impacts cannot be considered in isolation. As such, any sustainability impact assessment of NTMs needs to consider their effects on FDI as well as trade (and other aspects of sustainable development).

*“Domestic procedural obstacles are the primary reason why NTMs are perceived to be burdensome.”*

A synthesis of country-level ITC private sector survey studies on NTMs in the Asia-Pacific region reveals that, on average, 56% of all interviewed firms in the region reported encountering problems related to NTMs when engaging in international trade. Most significantly, it was reported that domestic procedural obstacles – rather than the required standards embedded in NTMs – are the primary reason why foreign and domestic NTMs are perceived to be burdensome. Such procedural obstacles are not NTMs themselves, but they exist because of NTMs. They include time constraints, informal or unusually high payments, lack of transparency, discriminatory behaviour of government officials and a lack of appropriate testing facilities. As such, policymakers wishing to promote exports need to address domestic procedural obstacles through trade facilitation as a priority – it also is easier than trying to change export partners’ trade regulations.

*“To protect health, safety and the environment, NTMs need to be coordinated or harmonized rather than eliminated.”*

A significant share of trade costs stem from the fact that technical regulations (SPS and TBT) are often very different between countries. As such NTMs are necessary to protect health, safety and the environment, they need to be coordinated or harmonized rather than eliminated. Research suggests that a similar level of protection of health, safety and the environment could be achieved at lower costs if regulations were more similar or mutually recognized.

*“International standards are aimed at assisting harmonization of measures, thereby facilitating international trade.”*

The use of international standards – a form of regulatory harmonization – is one way of overcoming challenges related to heterogeneity of regulations. International standards are considered scientifically justified and are accepted as the benchmarks against which national measures and regulations are evaluated. According to the WTO SPS Agreement, unless there is a scientific justification for a more stringent SPS protection, members must base their SPS measures on international standards in order to achieve broad harmonization. Similar to the SPS Agreement, the WTO TBT Agreement also places an obligation on member States to use international standards wherever they exist as a basis for their technical regulations and standards, unless the existing international standards or their parts are ineffective or inappropriate to fulfilling the respective legitimate objectives.

*“Most countries in Asia and the Pacific divert from the recommendations of international standards and under-regulate.”*

Most countries in Asia and the Pacific have been found to diverge from the recommendations of international standards bodies listed in the WTO SPS Agreement and have fewer measures. A likely reason for under-regulating is that many developing countries lack the necessary quality infrastructure to assess conformity, and thus apply less regulations. Many of the economies with relatively higher similarity to international SPS standards are significant agricultural goods traders, either as agricultural exporters such as New Zealand or

as food importers such as the Republic of Korea. Developing countries should more actively participate in the standard-setting process to ensure that they are relevant and can be adapted to their needs.

*“Sector case study analysis of regulatory stringencies in Bangladesh, the Lao People’s Democratic Republic and Viet Nam shows that NTMs are generally less stringent than those proscribed by the international standards.”*

Detailed case studies of the stringency of regulations were carried out on one imported product each in Bangladesh, the Lao People’s Democratic Republic and Viet Nam. The regulatory stringency analysis confirms the findings of the studies of overall regulatory structures vis-à-vis standards. Countries divert from international standards and they more often under-regulate than over-regulate. Products that are relatively more integrated in global value chains are closer to the international standards than other products. Due to the lack of clear identification of international standard bodies in the WTO Agreements for industrial goods as well as the higher complexity of these products, it is likely that the situation for industrial goods is worse.

*“Sustainability and impact assessments of new and existing NTMs should be systematically conducted.”*

The key to maximizing benefits is to determine appropriate levels of protection and to reduce the cost of compliance and the divergence of legitimate NTMs. Both regional cooperation and domestic efforts are needed to reduce the burden associated with compliance with NTMs and to strengthen positive impacts. While most burdens may result from export partners’ NTMs, countries also have room for improving their own NTMs. A useful starting point for increasing net benefits from streamlining NTMs is through the review of existing NTMs to eliminate unnecessary ones, and identify the ones that may need to be improved or updated. Newly proposed NTMs should be systematically subject to a regulatory impact assessment to ensure benefits of the new regulations outweighs the costs as much as possible.

*“NTMs and related procedures should be made easily available, ideally through a national trade portal providing comprehensive one-stop access to all relevant trade regulations.”*

Enhancing transparency in NTMs and related procedures can also reduce NTM-related costs and is a necessary precondition for any streamlining efforts. This may be done as part of the implementation of transparency provisions under the WTO Trade Facilitation Agreement (TFA), or the establishment of national trade portals. Enhanced transparency serves as a driver for reform and streamlining: some countries simply do not know how many trade regulations are in place and which agency is responsible. Enhanced transparency can also serve as a tool for capacity-building, as establishing trade portals synthesize all the available information for government officials.

*“Digitalization of NTM-related procedures, such as issuing and exchanging certificates of origin electronically, could significantly reduce compliance costs.”*

Complying with NTMs typically requires exchange of information between traders and trade control agencies, both within and across borders. Moving to web-based applications and exchange of information is expected to ultimately reduce trade costs by 25% on average in the region, generating savings for both governments and traders that could exceed \$600 billion annually. Good progress has been made in trade facilitation implementation, particularly on WTO TFA measures, but there is scope to do more. In particular, the implementation of cross-border paperless trade remains very challenging and a Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific could help.

*“Effectively addressing procedural obstacles for NTMs will require a broader approach to trade facilitation than simply implementing measures under the WTO TFA.”*

Effectively addressing procedural obstacles for NTMs requires a broader approach to trade facilitation than simply implementing measures under the WTO TFA. The lack of quality infrastructure (e.g., domestic SPS testing laboratories and an accreditation system for such laboratories) is frequently cited as one of the greatest difficulties faced by exporters, particularly agricultural exporters. Capacity-building in, and retention of, expertise needs to be strengthened, both at the domestic and the regional levels, supported by sharing of best practices. An integrated approach involving producers, officials, exporters and other affected parties may ensure more effective capacity-building with longer-lasting results. More emphasis on training of trainers may also help.

*“Trade facilitation measures should be inclusive, including ensuring that SMEs can benefit from Authorized Economic Operator schemes and enabling female traders to have a say in trade facilitation reforms.”*

To maximize the sustainable benefits of NTMs, it will be important that trade facilitation measures and efforts benefit not only larger traders, but also groups and sectors that tend to be excluded or disadvantaged. The United Nations Global Survey on Digital and Sustainable Trade Facilitation 2019 has found that measures aimed at the food and agricultural sector are relatively well implemented, but that trade facilitation measures targeted at SMEs and women remain rare.

*“Addressing NTMs in trade agreements and through regional initiatives should be considered, thereby deepening and facilitating implementation of existing multilateral rules in this area.”*

NTMs are increasingly addressed through trade agreements, as indicated by the growth of provisions on NTMs in agreements signed in recent years. Most of the examined regional trade agreements (RTAs) contain TBT and SPS chapters. Government procurement provisions are less common, although there has been a noticeable increase in recent years. Provisions on risk analysis and taking emergency measures would support achievement of SDGs, particularly through their protection of human, plant and animal life. Best practices on addressing NTMs through RTAs include: the use of international standards; technical assistance for less developed members; removal of duplicate measures; transparency; ensuring that technical regulations are binding; and ensuring that the application of regulations is carried out on a national treatment basis.

*“Coordinated policymaking provided by a deep level of integration offers clear advantages.”*

Mutual recognition arrangements may lower the costs related to NTMs, even between countries that have no existing trade agreements. At the same time, deeper levels of regional integration often aim to streamline intraregional NTMs. For example, the ASEAN Economic Community Blueprint 2025 places reducing the cost of NTMs as its core component of trade facilitation strategy. In the case of the Eurasian Economic Union (EAEU), certain NTMs are shared across members, and the development of SPS and TBT measures requires consensus by all EAEU member States; a dedicated online web portal and protocols exist to address conflicts related to measures deemed inconsistent with the EAEU Agreement by some members.

*“Beyond NTMs on goods, policymakers should address barriers to trade in services as well as emerging ‘digital’ trade barriers.”*

Similar to trade in goods, international trade in services is affected by barriers, although the nature of regulations and barriers in services can be different from those affecting trade in goods. The Asia-Pacific region is significantly more restrictive in trade in almost all services sectors. This may, in part, explain why

trade in services in Asia and the Pacific as a share of total trade lags behind the global average, and more attention should be given to assessing the efficacy of barriers in services sectors. Encouragingly, on average since 2014, restrictiveness in trade in services in Asia and the Pacific across all sectors has decreased, whereas in economies outside of the Asia-Pacific region it has increased. At the same time, there has also been an increase in the incidence of certain policy measures that hinder the cross-border transfer of data, such as privacy protection regulations and digital taxation policies. Sharing data electronically can reduce the costs both of implementing NTMs and of trade and investment in general. Preliminary steps to address such “next generation” NTMs may facilitate future growth, trade and sustainable development.

 *“Enhancing regional cooperation is key to streamlining NTMs towards sustainable development.”*

In the Asia-Pacific region, efforts to streamline NTMs towards greater sustainable development are ongoing, but more efforts and coordination are needed, in particular through enhanced regional cooperation. A useful step to help address NTMs and related procedural obstacles would be to establish a regional NTB private sector reporting mechanism, possibly backed by an intergovernmental agreement to ensure that any barriers found are addressed. Capacity-building, including training of trainers, and the retention of expertise needs to be strengthened at the regional level, supported by the sharing of best practices. To achieve greater efficacy in the use of NTMs for sustainable net benefits, attention needs to be given to the design and development stage of such measures as well as their implementation; this could be facilitated by developing regional guidelines on sustainability impact assessment of new/existing NTMs since their impact spans well beyond national borders.



## INTRODUCTION



# The rise of non-tariff measures

During the past two decades, applied tariffs in the Asia-Pacific region have halved. At the same time, the number of non-tariff measures (NTMs), including sanitary and phytosanitary (SPS) measures and technical barriers to trade (TBTs), has risen significantly (figure 1). Both in relative and absolute terms, the impact of NTMs vis-à-vis tariffs as an impediment to trade has increased. While the higher tariffs imposed by the United States and China during the past two years have made headline news, the rising importance of NTMs as barriers to trade at the regional and global levels is expected to continue.<sup>1</sup> In fact, a key concern is that trade tensions evolve from existing relatively transparent tariff wars to discriminatory implementation of NTMs, the impact of which is much more difficult to assess and predict.

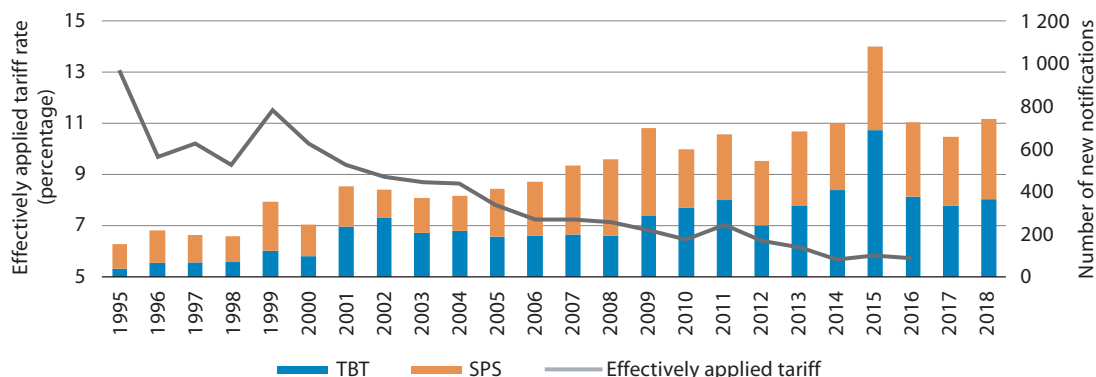
 *“Trade costs of NTMs are more than double that of ordinary customs tariffs.”*

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<sup>1</sup> In fact, from a technical point of view (i.e., reflecting international trade rules under the World Trade Organization), the tariffs imposed by the United States and the retaliatory tariffs by trade partners are not ordinary customs tariffs and are therefore considered to be NTMs (see box in this introduction).



**Figure 1** Average applied tariffs and annual new notifications to WTO of SPS and TBT measures in the Asia-Pacific region



Source: ESCAP, based on data from WTO and UNCTAD through WITS.

Note: There are no reliable data on how many of the new notifications to WTO come into force, as only proposed or amended NTMs are notified. However, it is often assumed that the majority of them do enter into force, and the trend of the stock of NTMs is essentially cumulative across the years.

According to estimates made by ESCAP and UNCTAD, the trade costs of NTMs are more than double that of ordinary customs tariffs. As such, they have become a key concern for traders as well as for trade policymakers who are aiming to ensure that trade can continue to support sustainable development. Accordingly, this introduction defines NTMs and provides an overview of NTM trends and developments in the Asia-Pacific region. Chapter 1 explores how NTMs relate to the Sustainable Development Goals (SDGs). The costs associated with NTMs, together with the impacts of NTMs on trade and investment as well as the private sector perspective on NTMs, are discussed in chapter 2. Chapter 3 considers international standards, and notes that one of the most effective ways to bring down costs associated with NTMs is to ensure that NTMs are aligned with international standards. Chapter 4 provides policy recommendations and highlights good practices in the effective management of NTMs.

*“NTMs are not inherently good or bad – they add to trade costs, but can be important instruments in achieving SDGs, and can even promote trade.”*

NTMs as policy instruments are not inherently good or bad. They often serve legitimate and necessary purposes, such as protection of human, animal and

plant health, or protection of the environment, and can be important instruments in achieving the 2030 Agenda for Sustainable Development. Furthermore, although NTMs, such as food or technical standards, generally increase production and trade costs, they can also potentially boost trade under certain conditions. For example, when an exporting country has high sanitary and phytosanitary standards in place, consumers in importing countries feel more confident about the quality of those food products and demand may increase. Stricter domestic food safety standards can make it easier for domestic exporters to meet trade partners’ standards, thereby further boosting trade.

At the same time, a key characteristic of NTMs is that they generate costs for producers and traders who adhere to them.<sup>2</sup> Such costs may raise prices, thus inhibiting international trade. NTMs are often more complex, less transparent and, due to their technical nature, are often more difficult to monitor and more challenging than tariffs. Therefore, they can sometimes provide a means for governments to discriminate against imported products, if so desired, without appearing to breach the non-discrimination principle of the global trade regime.

In this context, the content of this introduction is as follows. Section A provides an overview of the

<sup>2</sup> A detailed discussion of costs is presented in chapter 2.

taxonomy of NTMs and related concepts. Section B contains a review of the state and trends of NTMs in the Asia-Pacific region.

## A. WHAT ARE NON-TARIFF MEASURES?

*“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.”*

If you ask traders what requirements they must meet to import or export a certain product, you will most likely get a list of regulations and procedures (and complaints), but few would rarely use the term “NTMs”.<sup>3</sup> Many of these regulations may be different types of product-specific requirements imposed by governments, while others may be standards preferred by their business partners, and yet others may relate to border or payment procedures. To understand and address NTMs in a systematic manner, it is first necessary to define and categorize NTMs and differentiate them from related concepts.

### 1. International Classification of Non-Tariff Measures

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 (UNCTAD, 2012). The early discussion regarding NTMs can be traced back to the creation of the General Agreement on Tariffs and Trade (GATT) in 1947, in which related provisions are laid out in the official text.<sup>4</sup> However, for a long time, there was no commonly accepted definition of NTMs. It was only in 2006, when UNCTAD established the Group of Eminent Persons on Non-tariff Barriers (NTBs) and the Multi-Agency Support Team (MAST),<sup>5</sup> that this broad but widely accepted concept of NTMs emerged. It is necessary

to stress that ESCAP, UNCTAD and other agencies consider only mandatory government regulations as NTMs. Other provisions that may create barriers to trade, such as standards and associated procedures are not NTMs. NTMs, by definition, are neutral – there is no *a priori* assessment of their legality, nor on their net impact on trade or welfare.

In contrast to the rather succinct definition, the universe of NTMs exhibits an enormous diversity and complexity. For example, some NTMs target the price of goods, such as administrative pricing, variable charges, anti-dumping and countervailing measures etc., while others target the quantity of goods, such as non-automatic licensing, quotas, import prohibitions etc. Some NTMs target the characteristics of goods, such as technical standards and labelling requirements etc. There are also NTMs that do not target goods directly, but instead affect different processes, such as customs procedures and administrative practices, government procurement policies and so on.

Through the years, MAST has developed a coding system to provide a base to collate and tally NTMs. The objective of the International Classification of Non-Tariff Measures (ICNTM) is to provide information and clarification on new and existing measures, so as to improve their comparability across countries (UNCTAD, 2016). The ICNTM serves as a common language on categorizing NTMs. It is officially endorsed by the United Nations Statistics Division (United Nations Statistics Division, 2012) as the International Classification of NTMs for data collection across countries and for reporting on internationally comparable data on NTMs. As shown in table 1, NTMs are categorized via a hierarchical tree into 16 chapters from A to P. Each chapter consists of three further levels of sub-branches.<sup>6</sup> Chapters A to O are import-related measures, whereas chapter P concerns exports only. In accord with the definition, the classification only acknowledges the

<sup>3</sup> Such a private sector perspective provides useful information on the level of restrictiveness of various NTMs (see chapter 2, section C).

<sup>4</sup> For example, GATT Article VII on Customs Valuation, Article XI on General Elimination of Quantitative Restrictions, and Article XX on General Exceptions allow NTMs under specific circumstances.

<sup>5</sup> The MAST team comprises eight international organizations – the Food and Agriculture Organization of the United Nations (FAO), International Monetary Fund (IMF), International Trade Centre (ITC), Organisation for Economic Co-operation and Development (OECD), United Nations Industrial Development Organization (UNIDO), UNCTAD, the World Bank and WTO.

<sup>6</sup> For example, under chapter A (SPS), A2 level contains “Tolerance limits for residues and restricted use of substances”, which further contains more detailed classification, such as A21, “Tolerance limits for residues of or contamination by certain (non-microbiological) substances”.


**Classification of NTMs in the UNCTAD Trade Analysis Information System (TRAINS)**

|                |                               |                                                                                                          |
|----------------|-------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>Imports</b> | <b>Technical measures</b>     | A. Sanitary and phytosanitary measures                                                                   |
|                |                               | B. Technical barriers to trade                                                                           |
|                |                               | C. Pre-shipment inspection and other formalities                                                         |
|                | <b>Non-technical measures</b> | D. Contingent trade-protective measures                                                                  |
|                |                               | E. Non-automatic licensing, quotas, prohibitions and quantity-control measures other than for SPS or 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 (excluding export subsidies under P7)                                                       |
|                |                               | M. Government procurement restrictions                                                                   |
|                |                               | N. Intellectual property                                                                                 |
|                |                               | O. Rules of origin                                                                                       |
| <b>Exports</b> |                               | P. Export-related measures                                                                               |

Source: UNCTAD (2016).

existence of an NTM, and does not pre-judge on its legitimacy, adequacy, necessity, or whether or not it is discriminatory.

According to this classification system, the first three chapters are technical measures. Chapter A (SPS) and B (TBT) include tolerance limits for residuals and restricted use of substances; hygienic requirements; labelling, marketing and packaging requirements; product identity requirements; specification on production and post-production; and conformity of assessment procedures etc. Many SPS and TBT measures are based on international standards, such as Codex Alimentarius (for some SPS measures) or ISO (for some TBT measures).

*“Standards are not, in themselves, NTMs. To be considered an NTM, a standard must be referenced in government regulation, making it mandatory.”*

As mentioned above, standards are not, in themselves, NTMs. To be considered NTMs, standards must be referenced in government regulations, making them mandatory (see online annex)<sup>7</sup>. Chapter C on pre-shipment inspection and other formalities covers requirements on direct consignment, pass-through at certain ports, and import monitoring and surveillance.

Chapters D to O of the ICNTM classification are various non-technical measures. In chapter D, contingent trade protective measures consist of anti-dumping, countervailing, and safeguard measures. The steel and aluminium tariffs imposed by the United States, as well as the tit-for-tat tariffs spat between the United States and China are not ordinary customs tariffs; thus they are classified as contingent trade-protective measures, which means the policy implications and remedy tools are different to those of ordinary customs tariffs (see box 1).

<sup>7</sup> [www.unescap.org/resources/aptir-2019-online-annex-ntms-and-standards](http://www.unescap.org/resources/aptir-2019-online-annex-ntms-and-standards).



## Trade tensions and NTMs

Tariffs featured in the news recently are technically not ordinary customs tariffs, but are in fact “non-tariff measures”. For example, United States tariffs on solar panels and washing machines were notified to the World Trade Organization (WTO) on 26 January 2018 as part of the WTO Agreement on Safeguards due to purported findings of serious injury or threat thereof caused by increased imports (ICNTM Chapter D).<sup>a</sup> Subsequent United States’ tariffs on steel and aluminium were also safeguard measures and, as such, were challenged by other WTO members as being inconsistent with the Agreement (WTO, 2018a). Buy American laws, which instructed all United States Federal entities to source goods, products and materials – including iron, steel and manufacturing goods from producers in the United States – fall under ICNTM Chapter M, government procurement restrictions (United States, 2017). In the ongoing tariff spat between China and the United States, to compensate United States agricultural producers for the retaliatory Chinese tariffs, the Federal Government disbursed \$12 billion to affected farmers in 2018, and plans to spend a further \$16 billion in 2019 – Chapter L (subsidies other than export subsidies) in ICNTM classification (United States Department of Agriculture, 2019; Congressional Research Service, 2019).

Geopolitical issues can further take the form of outright import and export bans (embargos) through unilateral or multilateral sanctions (ICNTM Chapter P for exports, and quantitative restrictions under chapter E for imports), as in the case of United States’ trade with the Islamic Republic of Iran, and global trade with the Democratic People’s Republic of Korea. In July 2018, the Government of Japan, claiming mistrust of the Republic of Korea’s export controls, withdrew the Republic of Korea from the “whitelist” of preferential trading partners, thus having an impact on critical inputs to Republic of Korea’s industries – Chapter P1 of ICNTM classification – export licences, quotas, prohibitions and other quantitative export restrictions (Japan, 2019). The Republic of Korea responded in kind by removing Japan from its whitelist of countries with preferential trade status (Hwaya, 2019).

Technical regulations are also sometimes used in trade disputes under seemingly legitimate justifications. For example, Kyrgyzstan put in a temporary import ban for live birds, bird meat and eggs from some parts of Kazakhstan on 9 October 2018 due to SPS reasons – Chapter A of ICNTM (Informburo.kz, 2018). However, the Government of Kazakhstan deemed measures as illegitimate, claiming that specified SPS concerns were not present in the affected areas for years. In retaliation, three days later, the Government of Kazakhstan imposed a temporary import ban of meat from Kyrgyzstan “due to unfavourable situation regarding dangerous diseases in the territory of the Republic of Kyrgyzstan” (Kursiv.kz, 2018). The situation very soon diffused and measures at both sides were withdrawn (Sputnik.kg, 2018).

<sup>a</sup> See G/SG/N/8/USA/10/Suppl.3 and G/SG/N/8/USA/9/Suppl.4

Chapter E deals with measures aimed at restricting quantity of goods, such as non-automatic licensing, quotas, prohibitions etc. Chapter F covers price controls on imported goods such as, for example, minimum import prices, reference prices, and seasonal duties. Chapter G concerns financial measures, such as advance payment requirements, multiple exchange rates, and measures that affect terms of payment. Measures affecting competition are given in chapter H such as, for example, importing by state trading enterprises. Chapter I on

trade-related investment measures consists of local content requirements and trade balancing measures. Distribution restrictions in chapter J include geographical distribution measures and limits on resellers. Chapters K to O contain measures related to after-sales servicing, subsidies, government procurement restrictions, intellectual property rights and rules of origin.

Finally, chapter P covers together all export-related NTMs, including: technical measures imposed on

exports;<sup>8</sup> export formalities; export licences, quotas, prohibitions, other quantitative restrictions; price controls; state-trading enterprises; export support measures; and measure on re-exports etc. They are equally as diverse as import-related measures (UNCTAD, 2016).

## 2. Non-tariff measures versus non-tariff barriers

*“Non-tariff barriers (NTBs) are the policies that induce an adverse impact on trade due to the specific discriminatory and protectionist intent.”*

Non-tariff barriers (NTBs) are the policies that induce an adverse impact on trade due to the specific discriminatory and protectionist intent. Unlike for NTMs, there is no widely accepted definition of NTBs. Whether an NTM is an NTB largely depends on the intent of the regulation. NTMs are primarily put in place to serve public interest, such as the protection of public morals or health and lives of humans, animals or plants; pursuance of foreign policy or national security goals; achievement of a monetary policy mandate; protection of artistic, historical or archaeological treasure; and conservation of natural resources or wildlife (Global Trade Alert, 2018). Classifying an NTM as an NTB is a rather contentious issue since trade partners are likely to disagree on whether a particular NTM is discriminatory or has a protectionist intent. Strictly speaking, however, technical NTMs are, de facto, not NTBs unless they have been successfully challenged through the WTO dispute settlement process (lengthy and expensive). Nevertheless, it is generally seen that some technical NTMs are indeed discriminatory/more trade restrictive than necessary (i.e., they are NTBs), and are sometimes used by governments as a trade policy. Non-technical NTMs are mostly NTBs. For example, quotas or subsidies are used with the intention to discriminate and affect trade. As shown in box 1, governments can be creative and use virtually any NTM category as an NTB. NTBs could be targeted for removal, whereas other NTMs, subject to regulatory review, could either continue to

exist or be replaced by more effective and efficient policy measures (such as in the case of domestic policies restricting the use of alcohol and tobacco in lieu of NTMs, as discussed later in this report).

## 3. Procedural obstacles

Closely related to NTMs, procedural obstacles are practical challenges, such as long delays in testing or certification, inadequate facilities, lack of adequate information on regulations, or infrastructural challenges. While not regulations themselves (i.e., not NTMs), they exist because there are NTMs. As discussed in chapter 2, section C of this report, it is most often procedural obstacles associated with NTMs that are found to be burdensome by traders, rather than the NTMs themselves.

The burden of complying with NTMs and associated procedural obstacles is especially felt in the economies of developing and least developed countries (LDCs), where facilities necessary to achieve compliance with technical measures are often lacking or inadequate. Developing economies consequently must resort to outsourcing services such as laboratory testing or certification to meet standards, which can erode any cost advantages in production that they may have.<sup>9</sup> Most notably affected are the agricultural and food sectors. This is particularly disadvantageous for developing economies and LDCs, which often have a comparative advantage in those sectors and with large portions of their populations that derive livelihoods from activities in those sectors. Developing economies are also negatively affected because consignments from these countries tend to be smaller, hence SPS-related costs per consignment are higher.

## B. NON-TARIFF MEASURES IN ASIA AND THE PACIFIC REGION

NTMs are national regulations. As such, the only true comprehensive sources of policy regulations that could “potentially have an economic effect on international trade in goods, changing quantities traded, or prices or both” are national repositories of

<sup>8</sup> For example, when exporting live animals from Kyrgyzstan, “exporting animals must be quarantined for 30 days” [Government of Kyrgyzstan Decree of June 18, 2015 No. 377, “On the approval of priority veterinary and sanitary requirements for the prevention of animal diseases.”].

<sup>9</sup> In one example, some agricultural goods from Myanmar bound for Mae Sot District in Tak Province (Thailand border province next to Myanmar) have to first be tested in Chiang Mai Province (more than 350 km away), before being shipped back to Mae Sot.

legislative acts. However, member States of WTO, under certain circumstances discussed below, are also required to notify the WTO Secretariat of new or changed NTMs. Furthermore, to build a comprehensive overview of the stock of NTMs across the world, UNCTAD in collaboration with other international agencies including ESCAP, regularly collects data on NTMs through systematically examining officially published national legislation. Based on these two sources, the following discussion provides an overview of the state and trends of NTMs in the Asia-Pacific region.

## 1. WTO notifications

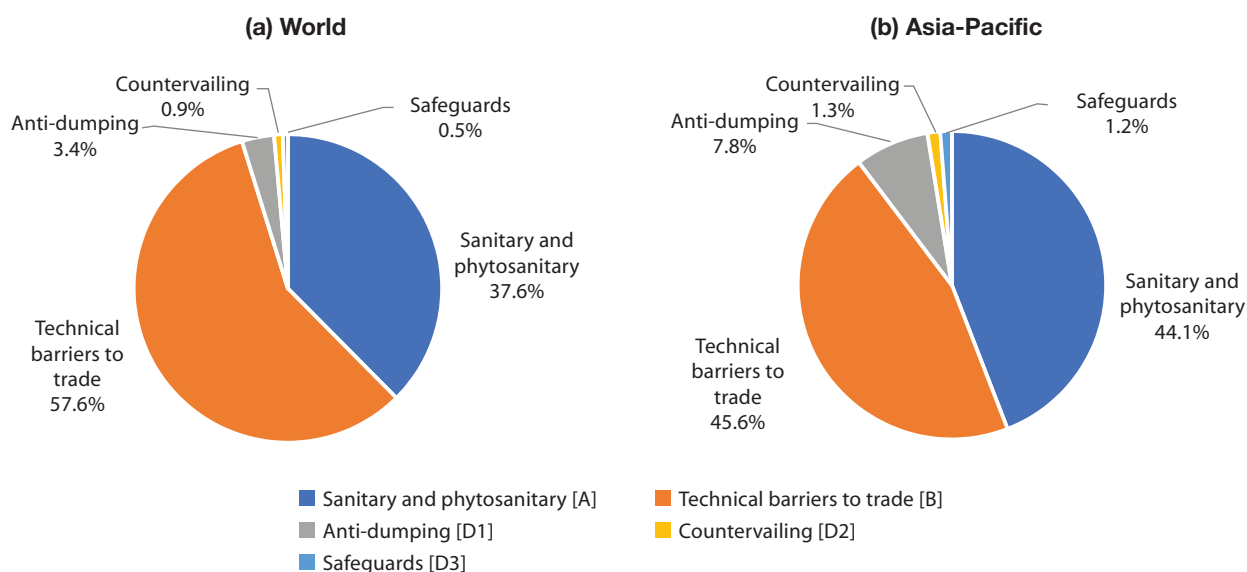
Several WTO agreements set out multilateral rules on NTMs. For example, the WTO SPS Agreement sets out the basic rules on technical measures related to

food safety as well as animal and plant health standards (WTO, 2018b), while the TBT Agreement sets out rules on other types of technical measures. According to the WTO SPS and TBT Agreements, WTO members are required to provide advanced notice of new or changed regulations.<sup>10</sup> Additionally, pursuant to other WTO Agreements, such as the Agreement on Subsidies and Countervailing Measures and Anti-Dumping Agreement among others, members must notify subsidies and contingent trade protective measures etc.

Since 2013, globally, about 3,000 new or changed NTMs have been reported to WTO every year, most of which have been TBTs and SPS measures. In 2018, 95% of all notifications were SPS and TBT, with the rest falling within the contingent trade protection category (chapter D in ICNTM, figure 2).



**NTMs initiations notified to WTO, 2018**

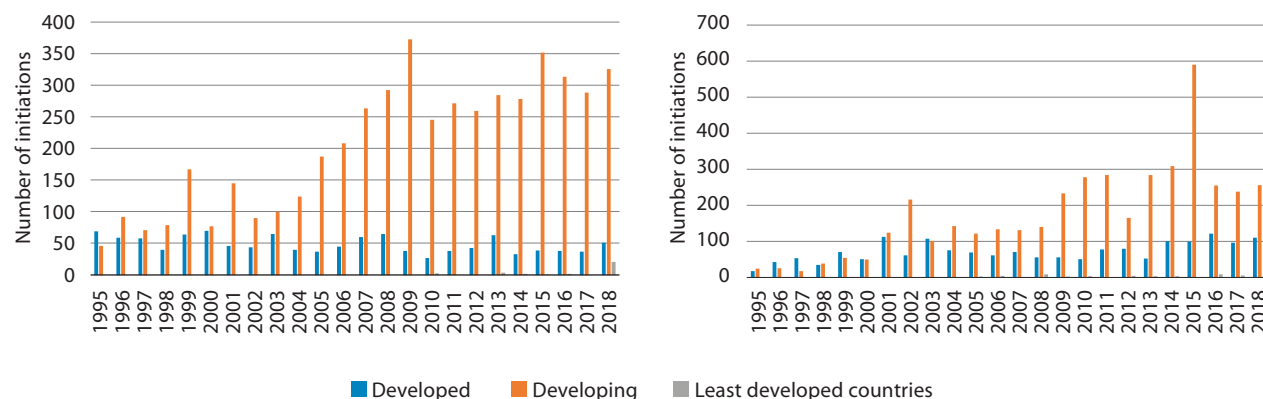


Source: ESCAP, based on data from WTO (accessed 15 May 2019).

<sup>10</sup> Under the SPS Agreement, WTO members are allowed to use higher and more restrictive standards when there is scientific justification, or there is consistent (not arbitrary) appropriate assessment of risks. Similarly, the WTO TBT Agreement aims to ensure that regulations, standards, and testing and certification procedures do not create unnecessary obstacles. The TBT Agreement also allows WTO members to adopt standards they consider appropriate – for example, for human, animal or plant life or health, for the protection of the environment or to meet other consumer interests. Moreover, WTO members can take necessary measures to ensure standards they set are met by domestic and foreign producers, as long as the procedures used to decide whether a product conforms with relevant standards are fair and equitable.



**Notifications of SPS and TBT initiations to WTO by Asia-Pacific economies**



Source: ESCAP, based on data from WTO (accessed 15 May 2019).

*“In Asia and the Pacific in 2018 the number of new SPS and TBT initiations notified to WTO reached 1,360 measures – a 15% year-on-year increase.”*

The number of new or updated SPS and TBT measures initiated globally and notified to WTO in 2018 reached 3,466 – a 16% increase from 2017. In Asia and the Pacific, the number of new initiations reached 1,360 measures – a 15% year-on-year increase. In comparison, 1,875 SPS and TBT measures were initiated globally, and 522 in Asia and the Pacific in 2007.

The increase in the number of initiations over the past decade has been partially triggered (and expected) by the accession of 13 new members to WTO, 7 of them from Asia and the Pacific region.<sup>11</sup> The main reason, however, is the increase in notifications by developing countries (figure 3). The SPS and TBT notifications by the developed economies in Asia and the Pacific have remained relatively static over the years, whereas initiations by the developing economies have experienced substantial growth. Significantly, notifications by LDCs have recently experienced a notable growth as well – SPS measures initiated by LDCs in 2018 alone amounted to 21 notifications. In comparison, since 1995 up to 2017, LDCs in Asia

and the Pacific region notified only 12 measures in total. While some of this growth can be attributed to enhanced notification efforts, it is generally agreed that a large portion of these are due to developing countries’ efforts to improve their technical, sanitary and phytosanitary regulatory frameworks.

While notifications of initiated SPS and TBT measures to WTO provide a good indicator of the increasing trend of notifications across time, they do not provide an accurate representation of the overall stock of measures in force. The main purpose of the WTO notification mechanism is to provide an opportunity for trade partners to comment on upcoming new or modified measures that could potentially have a significant impact on trade (whether positive or negative), rather than to act as a repository of measures. Furthermore, only measures that are different from international standards are required to be notified (see chapter 3).

Some economies notify all the new potential NTMs, irrespective of whether they adhere to international standards or not. Others only notify those that adhere to international standards. Yet others do not notify either. Some countries potentially confound national standards with NTMs (i.e., notify voluntary standards). Moreover, countries are required to notify only if the

<sup>11</sup> The Russian Federation, Samoa and Vanuatu in 2012, the Lao People’s Democratic Republic and Tajikistan in 2013, Kazakhstan in 2015 and Afghanistan in 2016. See WTO accession status of ESCAP Member States and Associate Members, available at [www.unescap.org/our-work/trade-investment-innovation/trade-policy/escap-wto-membership](http://www.unescap.org/our-work/trade-investment-innovation/trade-policy/escap-wto-membership).

“regulation may have a significant effect on trade of other members” (Annex B, WTO SPS Agreement and Article 2.9 in the WTO TBT Agreement). In addition, while it is encouraged to publish final regulations as they come in force, few countries follow this recommendation with all regulations. As such, the repository often only contains draft versions of regulations with no clear indication on whether they were adopted, when, or in what form. Finally, pre-1995 regulations, since they were not “new” or “amended”, are not in the WTO database.

## 2. UNCTAD TRAINS

The lack of consistent notification, coupled with the fact that not all economies are WTO members, prompted UNCTAD to lead an international effort with many national, regional and international partners, including ESCAP, to collect comprehensive data on NTMs. The UNCTAD TRAINS database has a coverage of close to 90% of world trade. All data are published online and are accessible free of charge through several web-portals.<sup>12</sup> The database also allows quick access to full-text regulations of many countries. NTM data are collected by extensively reading and analysing national legislative documents, such as laws, decrees or directives. Once a relevant regulation is identified, each specific provision is classified into the detailed NTM codes and respective Harmonized System (HS) product codes. As of May 2019, more than 60,000 measures from 88 economies (counting the European Union as a single economy) have been classified and made publicly available.<sup>13</sup> More than 25,000 measures came from 28 Asia-Pacific economies included in the database.<sup>14</sup>

*“In the Asia-Pacific region, 30% of measures in the UNCTAD TRAINS NTM database are sanitary and phytosanitary measures, and 48% are technical barriers to trade.”*

The majority of measures in the database are SPS measures and TBTs (figure 4). Globally, 41% of measures in the database are SPS (30% in the Asia-Pacific region) and 40% are TBTs (48% in the Asia-Pacific region). The third-largest category, export-related measures, accounts for 9% of measures globally and 13% of measures in the Asia-Pacific region. Notably, NTMs in chapters J to O have not been actively collected yet, but are included in the database if reported.

*“China has the highest number of NTMs in the Asia-Pacific region, followed by high-income economies of New Zealand, Republic of Korea and Australia.”*

In terms of individual economies, the highest number of NTMs in the Asia-Pacific region is in China, followed by high-income economies of New Zealand, Republic of Korea and Australia (figure 5).<sup>15</sup> In general, the stock of NTMs relates to the level of development – more-developed economies generally have stronger legislative frameworks. However, caution should be exercised when comparing the collection of measures across economies. Although strong efforts are made to ensure cross-country comparability, the legal architecture of countries varies significantly, and the data collection process is complex (including due to translation).<sup>16</sup>

As this section has shown, NTMs are already prevalent and are becoming more so as developing countries enhance their technical regulatory frameworks. The key questions are whether NTMs contribute to sustainable development, and whether these contributions outweigh the trade costs associated with NTMs. The relationship between NTMs and sustainable development is presented in chapter 1. A detailed discussion of the effects of NTMs on trade and economic development is presented in chapter 2.

<sup>12</sup> UNCTAD TRAINS portal [trains.unctad.org](http://trains.unctad.org); World Integrated Trade Solution (WITS) platform at [wits.worldbank.org](http://wits.worldbank.org); and ITC/UNCTAD/WTO's Global Trade Helpdesk at [www.globaltradehelpdesk.org](http://www.globaltradehelpdesk.org).

<sup>13</sup> Caution should be exercised when comparing these figures to WTO notifications and measures under ICNTM classification disaggregates into specific Chapters, whereas WTO notifications by individual economies often compound many clusters into one measure.

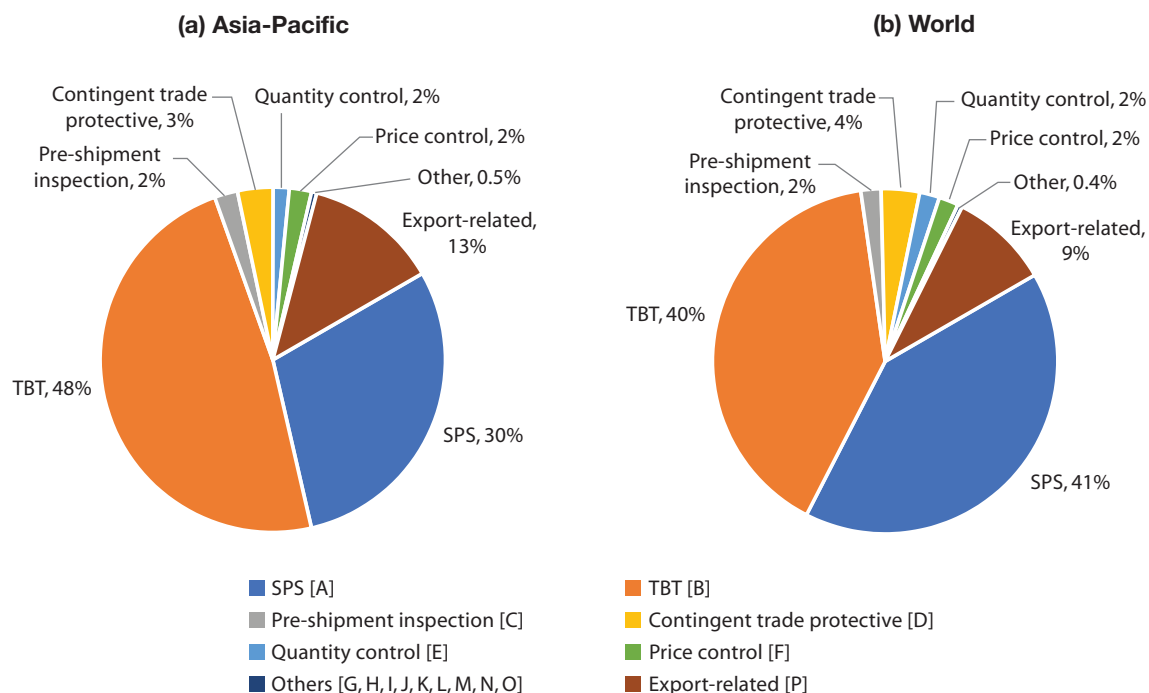
<sup>14</sup> UNCTAD Trade Analysis Information System (TRAIS) database, available at <http://trains.unctad.org/> (accessed 15 May 2019).

<sup>15</sup> The number of NTMs does not say anything about the trade restrictiveness of a country. For example, a country can have many measures that apply to single products or few measures applying to large product groups. Also, the restrictiveness of different measures cannot be compared. A labelling requirement is different from an import prohibition, for example.

<sup>16</sup> UNCTAD (2018, UNCTAD TRAINS: The Global Database on Non-Tariff Measures) describes the database in detail, and the possibilities and limitations of comparing the data across countries.

**Figure 4**

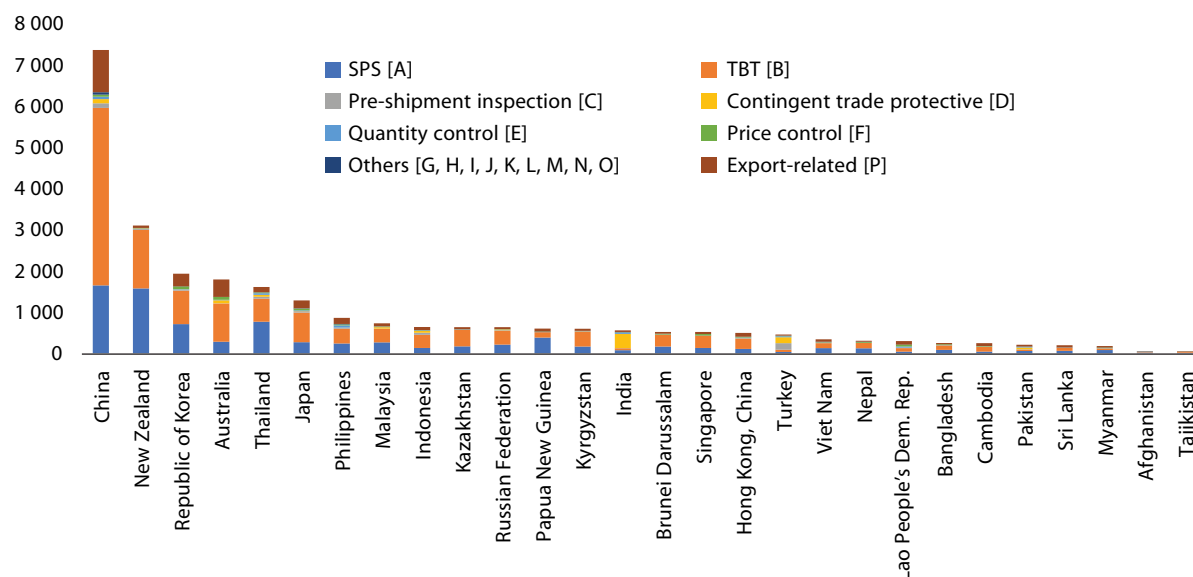
### NTMs in the Asia-Pacific region and globally, by type



Source: ESCAP, based on the UNCTAD TRAINS database (accessed 15 May 2019).

**Figure 5**

### NTMs in the Asia-Pacific region, by economy



Source: UNCTAD TRAINS database (accessed 15 May 2019).

## C. CONCLUSION

This chapter introduced the classification of NTMs and overviewed the trends and stocks of NTMs in the Asia-Pacific region. As noted, NTMs are not inherently good or bad – they can be important tools in achieving SDGs. At the same time, the proliferation in NTMs globally and within the region mean that they are now a more significant deterrent to trade than ordinary customs tariffs. In some cases, NTMs could implicitly be used in lieu of tariffs to intentionally restrict trade, rendering NTMs as NTBs. The key challenges to policymakers are to evaluate whether NTMs are the most effective tools in achieving the public policy objectives, and if so, how to strike the

right balance between their positive (intended) effects and cost to traders (and ultimately the consumers) associated with them. In many cases, reducing the costs to traders does not mean outright removal of NTMs (which may indeed be a viable option for some), but rather ensuring that NTMs are coordinated across economies and associated procedural obstacles do not put an unnecessary burden on traders. As such, chapter 1 links NTMs to the 2030 Agenda for Sustainable Development in an effort to highlight the beneficial side of NTMs. Chapter 2 presents estimates of costs associated with NTMs, the impact of NTMs on trade and investment as well as the issues pertaining to the procedural obstacles that exist because of NTMs.

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## ONLINE DATABASES

- UNCTAD. Trade Analysis Information System (TRAINS) database. Available at <https://trains.unctad.org/>.
- World Bank. World Integrated Trade Solution (WITS) database. Available at <https://wits.worldbank.org/>.







# Why non-tariff measures matter for sustainable development

As indicated in the Introduction, non-tariff measures (NTMs) are already prevalent in the Asia-Pacific region, and are becoming more so as developing countries in the region and beyond enhance their technical regulatory frameworks. The key questions are whether NTMs contribute to sustainable development, and whether these contributions outweigh the trade costs associated with NTMs. As such, this chapter explores how NTMs address the Sustainable Development Goals (SDGs). A detailed discussion on the effects of NTMs on trade, investment and economic development is presented in chapter 2.

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future (United Nations, 2015). The 17 SDGs call for urgent action by all economies – developed and developing – in a global partnership. They recognize that ending poverty and other deprivations must go together with strategies that improve health and education, reduce inequality and spur economic growth – all while tackling climate change and working to preserve our oceans and forests (figure 1.1). Each Goal is subdivided into specific targets, and each target has one or more indicators.<sup>1</sup>

<sup>1</sup> For example, SDG 1 (End poverty in all its forms everywhere) includes 7 targets and 13 indicators. See <https://sustainabledevelopment.un.org/content/documents/11803Official-List-of-Proposed-SDG-Indicators.pdf>.



**The 17 Sustainable Development Goals**



Source: United Nations (2015).

The 2030 Agenda for Sustainable Development recognizes international trade as an engine for inclusive economic growth and poverty reduction, and as an important enabler for achieving SDGs (ESCAP, 2017). Trade and trade-related policies have a multifaceted link to SDGs. SDG 17 (“Partnerships for the Goals”), in particular, includes targets that seek to “promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system”, “significantly increase the exports of developing countries” and “realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries”. In addition to the trade-growth-economic development nexus, trade is strongly linked to SDGs that are related to health and safety, environment and

climate, public security and peace. As such, broadly speaking, NTMs can directly contribute to sustainable development as policy instruments, or they can indirectly affect sustainable development through their impact on trade in goods or through their far-reaching positive and negative externalities. A good example of such a multifaceted impact of an NTM is described in a recent study of the effects of the anti-illegal, unreported and unregulated (IUU) fishing legislation imposed by the European Union against imports of seafood from Sri Lanka (box 1.1).

*“NTMs have a multifaceted effect on sustainable development through direct and indirect impacts.”*



### The effect on SDGs of the European Union import ban on seafood from Sri Lanka

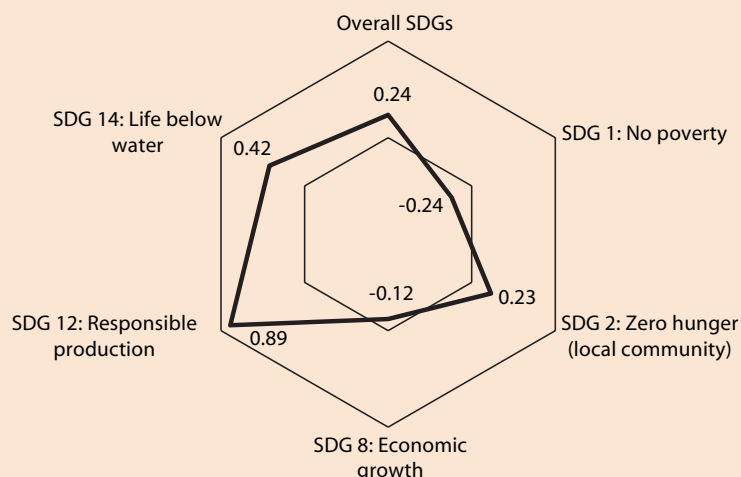
NTMs can have a direct impact on trade performance of trading partners. In addition to trade performance, NTMs may have direct and indirect linkages with SDGs of these trading partners. Sandaruwan and Weerasooriya (2019) explored the performance of the seafood export industry of Sri Lanka before, during and after the European Union instituted an import ban on Sri Lankan seafood because of its systematic failure to address IUU fishing. In addition, the authors developed indicators and measured the impact of the fish import ban on SDGs of stakeholders of the seafood industry in Sri Lanka.

Prior to the ban, the European Union was the single largest export market for Sri Lankan seafood. After the European Union instituted the import ban, Sri Lanka's market share in the European Union's seafood market dropped precipitously. As a direct result, domestic wholesale prices of fish plummeted. Furthermore, the number of employment opportunities in offshore fisheries decreased by 10%, and fishermen's household expenditure was reduced by 31%. As a remedial measure to income reduction, 90% of fishermen took loans from money lenders by mortgaging their properties; however, 25% were unable to settle their loans after two years.

To placate the European Union regulators, the Government of Sri Lanka instituted a number of domestic technical regulations that had significant and positive effects on sustainability. Because of the ban, all the relevant authorities in the fisheries sector of Sri Lanka worked effectively and achieved 82% of an Indian Ocean Tuna Commission compliance rate in 2017.<sup>a</sup> Due to the vessel monitoring system, awareness programmes for fishermen, boat inspections in the harbour and at sea, the movement of fishermen to foreign sea territories as well as the rate of fishermen arrested by foreign countries have declined by as much as 85% since the ban. The vessel monitoring system not only increased prevention of IUU fishing (SDG Targets 14.4 and 14.6), but also reduced the risk to fishermen who are now able to use it for distress calls, get weather information and fishing ground forecasting. In addition, the indirect effect of a local surplus meant that at the time of the ban, domestic consumer prices for seafood produce decreased, and boat crews were able to take 37% more catches home free of charge.

The study's SDG analysis revealed that the ban generated mixed effects on a selected set of SDGs (figure). The ban has had a positive impact on SDG 2 (No hunger), SDG 12 (responsible production), SDG 14 (Life below water), but a negative impact on SDG 1 (No poverty) and SDG 8 (Economic growth). This study recommended implementing further studies to determine the impacts of NTMs, and to adjust the nature of NTMs to generate holistic sustainable development across the world.

**Figure. Impact of the European Union ban on SDGs in Sri Lanka**



*Note:* The composite index developed by this study takes a value of +1 for maximum positive change and -1 for maximum negative change. As such, the overall finding of this study suggests that the net impact of the ban was positive.

<sup>a</sup> Indian Ocean Tuna Commission compliance. See <https://www.iotc.org/compliance>.

## A. DIRECT EFFECTS

Even though tariffs and certain NTMs, such as certain subsidies (box 1.5), feature in the framework for SDGs, concrete quantifiable indicators associated with most NTMs are largely missing. To address this gap in examining the link between NTMs and SDGs, ESCAP and UNCTAD developed a methodology that allows assessment of how NTMs of economies in the Asia-Pacific region address SDGs directly.

For this purpose, targets within SDGs were examined to determine which internationally traded products play a role in their achievement and what regulations imposed on such products may have a direct impact on the achievement of the target. As part of the mapping, SDG targets were linked to (a) related products, (b) NTMs that applied to these products and, in some cases, (c) relevant keywords. A measure was considered to have direct linkage to an SDG if: (a) it had a clearly stated SDG Target-related objective, or (b) it was not likely to have any objective other than the one that was relevant to the SDG Target (as in the case of trade in endangered species, narcotic drugs, cultural heritage items, arms and other weapons). Thus, the established linkages describe an intended (and positive) impact of NTMs on the achievement of SDG Targets (stated or implied).

For an illustrative example, take SDG Target 3.5, “Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol”. This SDG Target specifically mentions “alcohol” and, as such, NTMs in the UNCTAD TRAINS NTM database that target alcohol for consumption were shortlisted. Next, NTM categories that could ostensibly address SDG Target 3.5 were examined. For example, many countries now require labels (ICNTM classification B31 – labelling requirements) to include warnings such as “Excessive drinking is harmful to health” (China) or “Alcohol is not for children and teenagers up to age 18, pregnant and nursing women, or for persons with diseases of the central nervous system, kidneys, liver, and other digestive organs” (Russian Federation). For each economy in the UNCTAD TRAINS NTM database, such NTMs on food-grade alcohol were thus deemed to address SDG Target 3.5.

To illustrate the instances of when keywords were necessary, consider NTM classified as B82 in ICNTM,

“testing requirement”, for motor vehicles. Because the ICNTM classification does not go into detail of what those requirements are, without looking into the description of each measure, it would have been unclear whether motor vehicle testing requirements were intended for safety (addressing Target 3.6 – deaths due road traffic injuries) or air pollution reduction (addressing Target 11.6, ambient air pollution). Examination of keywords in the measure description, for example “carbon monoxide”, “emission test”, “emission compliance”, in combination with a product type (motor vehicles) allowed the creation of an unambiguous relationship between the measure-product combination and SDG Target 11.6.

Using this method, a detailed concordance table was developed between individual Targets, affected products and NTM classification (and keywords). This concordance table was then used to link individual measures in the UNCTAD TRAINS NTM database (more than 60,000 measures from 88 economies, counting the European Union as a single economy) with SDGs and individual Targets. For details of the methodology, see Kravchenko and others (2019). A brief overview of the findings of this analysis is presented below.

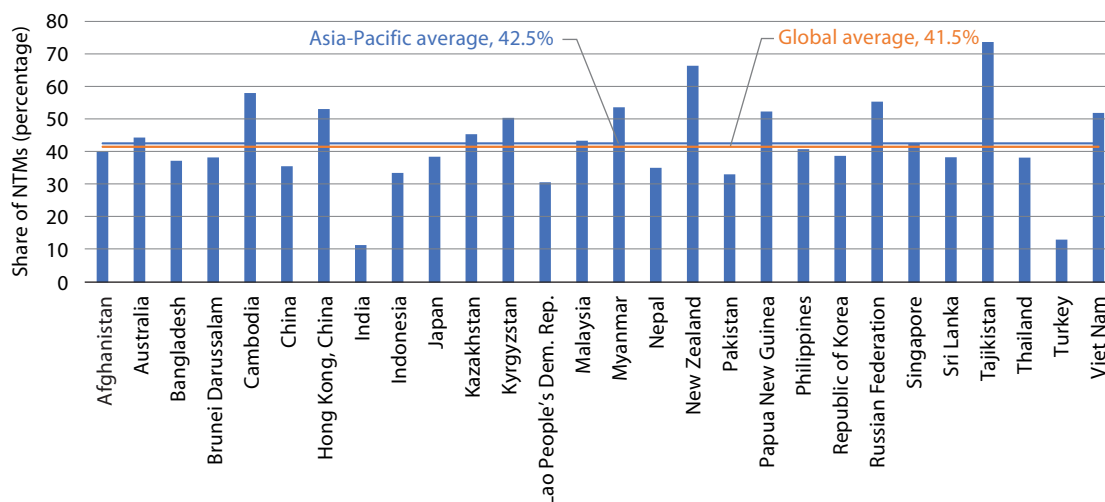
*“The vast majority of NTM categories that have a direct (and positive) impact on SDGs are technical measures, namely SPS and TBT.”*

The vast majority of NTM categories evaluated for having a direct (and positive) impact on SDGs were technical measures as well as export-related measures targeting specific products. Non-technical measures were also present, such as, for example, measures under chapters H and J that restricted channels for importation and distribution of sensitive and controlled goods such as medicines, narcotic drugs and precursors, alcohol and guns (relevant to SDG 3 on health and SDG 16 on crime and peace). Another example is NTM code E315 prohibiting importation of products infringing patents or other intellectual property rights (SDG 16 Target of reducing illicit financial flows).

The resultant matrix enabled an evaluation of the extent to which NTMs in each economy address specific SDGs (figure 1.2). In line with *a priori* expectations, India has the lowest share of NTMs directly addressing SDGs as most of its measures are non-technical measures (refer to figure 5 in the Introduction). New Zealand, on the other hand, has



Share of NTMs that directly address SDGs



Source: ESCAP calculations based on UNCTAD TRAINS database and methodology developed by ESCAP and UNCTAD (Kravchenko and others, 2019).

one of the highest shares of NTMs that directly address SDGs, as more than 97% of its measures are technical measures. Similarly, Tajikistan has a very high share of NTMs addressing SDGs, but unlike New Zealand, with only very few NTMs in place (there are more than 3,000 individual NTMs in New Zealand, and only 49 in Tajikistan, according to the UNCTAD TRAINS database).

Indeed, there is a positive association between the share of NTMs that address SDGs and the share of technical measures (particularly SPS) of all NTMs imposed by an economy (figure 1.3). In general, albeit with a few notable exceptions, it also seems that the higher the propensity of imposing NTMs by an economy, the lower the share of NTMs addressing SDGs in that economy. Controlling for the number of measures and shares of SPS measures, economies in Asia and the Pacific have, on average, more than six percentage points of a higher share of NTMs addressing SDGs than economies outside of the region. This suggests that in Asia and the Pacific, economies address SDGs relatively more intensively by using NTMs than elsewhere.

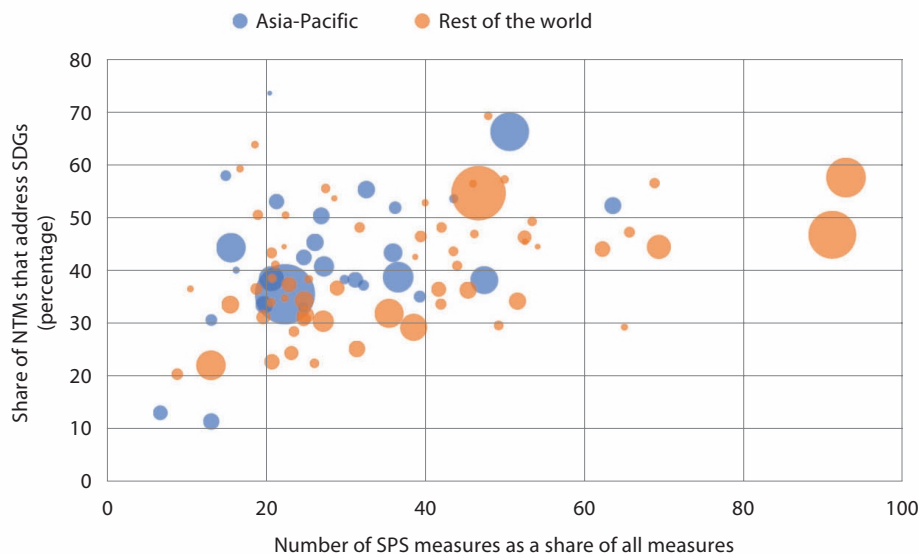
*“The more intensive use of technical measures means they are more likely to be addressing SDGs.”*

Figure 1.4 depicts the average share of NTMs in each economy in Asia and the Pacific, and the world, that have been identified as directly addressing SDGs across individual Goals. It should be noted, however, that a large share of NTMs addressing a particular Goal does necessarily indicate that NTMs are more effective in addressing that particular Goal. A large number of measures addressing an SDG, and which are relatively easy to comply with, may potentially be inconsequential in helping to achieve that Goal. For example, while there are many SPS measures, their relative individual contribution to the achievement of SDG 3 (Good health and well-being) may be rather limited. At the same time, one or a few individual NTMs can have a significant impact on SDGs. One clear example is the European Union’s import ban on seafood from Sri Lanka, which resulted in the uptake of sustainable fishing practices in the country and in improved safety of fishermen at sea (box 1.1). As such, these limitations must be kept in mind when interpreting the findings.

The highest share of SDG-related NTMs in the Asia-Pacific region directly address Goals 2, 3, 12 and 16. The share of NTMs addressing SDGs in Asia and the Pacific roughly follows the global pattern, although Goals 3, 12 and 16 are addressed by NTMs relatively more intensively than on average, worldwide.

**Figure 1.3**

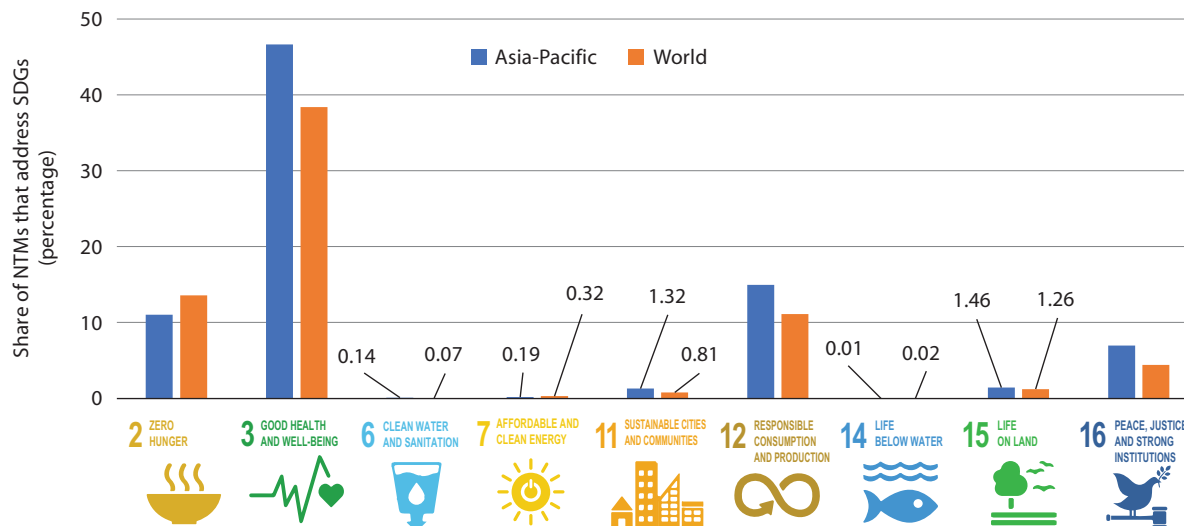
### Share of SPS measures vis-à-vis share of NTMs that address SDGs



Source: ESCAP calculations based on UNCTAD TRAINS database and methodology developed by ESCAP and UNCTAD (Kravchenko and others, 2019).

**Figure 1.4**

### Distribution of NTMs that directly address SDGs, by Goal



Source: ESCAP calculations based on UNCTAD TRAINS database and methodology developed by ESCAP and UNCTAD (Kravchenko and others, 2019).

*“The highest share of SDG-related NTMs in Asia and the Pacific directly address Goals 2 (Zero hunger), 3 (Good health and well-being), 12 (Responsible consumption and production) and 16 (Peace, justice and strong institutions).”*

It should be noted that (as discussed further below) most of product-NTM pairs are relevant to more than one SDG. To avoid overstating the linkages between NTMs and SDGs, a conscious effort was made to create a one-to-one correspondence between one product-NTM pair and only one SDG, i.e., the most directly affected SDG.<sup>2</sup> However, in some instances of recorded measures in UNCTAD TRAINS database, stated objectives and regulated products were relevant to more than one SDG; as a result, some double counting was unavoidable.<sup>3</sup>

Some prominent examples, where NTMs have strong potential to contribute to the achievement of SDGs as well as some other public policy objectives, are briefly described below.

### 1. Goal 3: Good health and well-being

This Goal aims to ensure healthy lives and promote well-being for everyone at all ages. Among its 13 targets, 10<sup>4</sup> are directly addressed by NTMs imposed on relevant groups of goods. Within these targets, the main issues addressed by NTMs are generally related to the following issues:

- Improving access to medicines and health-care products, while ensuring their safety and predictable efficacy;

- Reducing human consumption of products that are undeniably harmful to human health (e.g., narcotics and tobacco);
- Food safety;
- Increasing consumption of healthier foods, while reducing consumption of foods or additives that can contribute to the occurrence of non-communicable diseases (i.e., food quality and labelling);
- Reducing injuries and deaths on roads (i.e., motor vehicle safety);
- Maintaining a safe living environment and reducing exposure to harmful substances (e.g., hazardous chemicals).

*“The largest share of all SDG-related NTMs address SDG 3 (Good health and well-being).”*

As noted above, by far the largest share of all SDG-related NTMs address this Goal. Such NTMs include the regulation of medicines (quality, labelling, storage, certification, licensing, traceability, registration of goods/importers, importation and distribution channels etc.), food safety (primarily SPS measures), nutrition labelling of packaged foods and health warnings on alcohol and tobacco products, technical regulations on vehicle safety, restrictions and price control measures for trade in alcohol and tobacco products etc. While a detailed analysis of the impact of NTMs on individual health-related indicators is beyond the scope of this report, illustrative examples are presented in box 1.2.

<sup>2</sup> Thus, this approach is unlike the analysis, presented in box 1.1, of the European Union’s import ban on seafood from Sri Lanka, which examined all aspects of the sustainable development that were affected by NTM, both directly and indirectly.

<sup>3</sup> For example, one regulation may impose controls on transboundary movement of narcotics, drugs and guns – goods that are relevant to SDGs 3 and 16 – while another may regulate hazardous chemicals in general and chemicals suitable as precursors for weapons of mass destruction in particular (SDGs 12 and 16).

<sup>4</sup> Target 3.1- Target 3.9 and Target 3.a.



## The impact of NTMs on selected SDG indicators

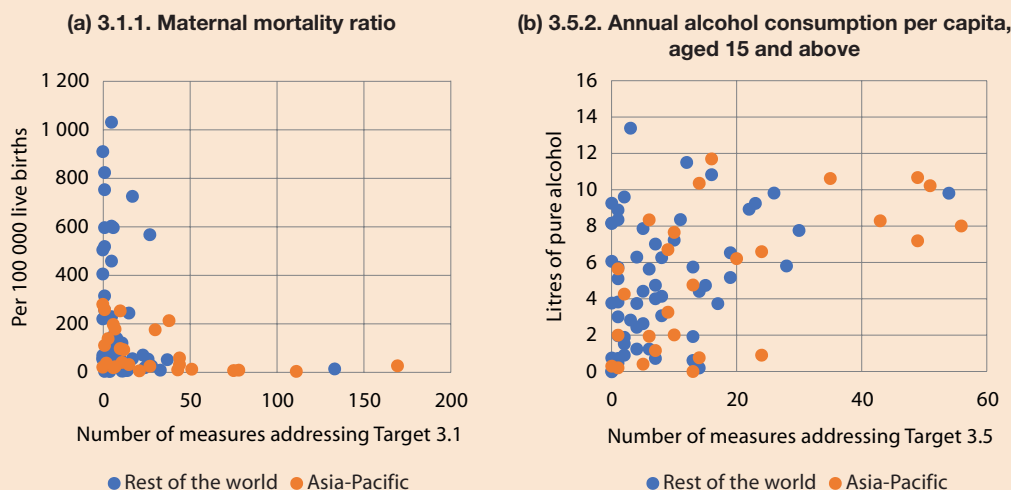
While numbers of NTMs provide an indication of how economies try to address their public policy objectives by using trade policy, the outcomes of these NTM policies are not always straightforward. The level of development, environmental factors, geographical location as well as non-NTM country-specific factors play a major role. Stringency of NTMs as well as the degree to which the regulations are enforced, rather than mere number of NTMs are also important. Additionally, as noted above, many NTMs can simultaneously have an impact on several Goals, and not always positively. Furthermore, some SDG indicators only consider the existence of NTMs rather than their effect on sustainability, such as Indicator 12.4.1, “Number of parties to international multilateral environmental agreements on hazardous waste”. As such, while signing an agreement on hazardous waste will most likely have a positive impact on sustainable development, that impact itself is not a measurable indicator of sustainability per se (as opposed to, for example “population below the international poverty line”). Finally, data for some indicators are yet to be collected on the global scale. Nevertheless, some illustrative conclusions can be made, based on selected indicators.

In the case of Indicator 3.1.1, “Maternal mortality ratio”, figure (a) shows that countries which regulate relatively more intensively generally have lower instances of maternal mortality. At the same time, keeping in mind that NTMs incur costs for traders (see chapter 2), the relationship suggests that some economies, particularly from the Asia-Pacific region, may end up “over-regulating” and there may be scope to reduce the number of regulations to drive down costs and availability of products addressing Target 3.1.

Conversely, figure (b) shows a positive relationship between number of NTMs addressing Target 3.5 and SDG indicator 3.5.2, “Annual alcohol consumption per capita, aged 15 and above”. While this may in part be due to issues of simultaneity (i.e., economies with high per capita alcohol consumption regulate more to bring it down), additional research suggests that in some cases trade policy is used for the benefit of local producers (i.e., NTMs that are NTBs). In this case other, non-trade-related policies, such as education campaigns and restrictions of consumption in public spaces, may be more appropriate (Vigato and Kravchenko, 2018).

Finally, the relationships between the number of NTMs addressing Target 3.4 (non-communicable diseases) vis-à-vis Indicator 3.4.1, “Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease” (figure (c)) suggests that while the number of NTMs is negatively associated with incidence of non-communicable diseases of both sexes, the impact on the mortality rate is more pronounced for females than males. A more detailed analysis at the country level, however, is required in order to draw an accurate conclusion for each, particularly when conducting a sustainability assessment of measures.

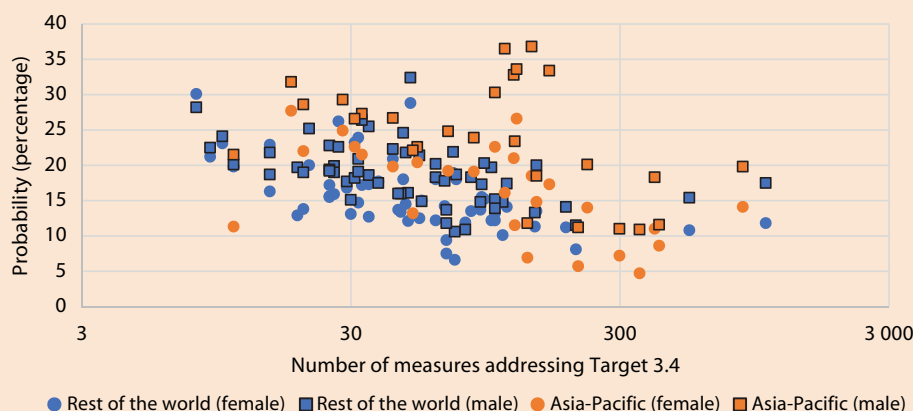
**Figure. The relationship between selected SDG Indicators (latest available year) and the number of measures addressing relevant Targets**





(continued)

(c) 3.4.1. Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease



Source: ESCAP calculations based on the UNCTAD TRAINS database, United Nations Global SDG Database and methodology developed by ESCAP and UNCTAD (Kravchenko and others, 2019).

## 2. Goal 12: Responsible consumption and production

*“NTMs that arise due to international agreements and address SDG 12 (Responsible consumption and production) are prevalent, highlighting the need for international collaboration to achieve the 2030 Agenda for Sustainable Development.”*

SDG 12 aims to ensure sustainable consumption and production patterns. Targets within this Goal, for which NTMs are relevant, aim to address such issues as resource efficiency of goods and production processes, reduction of resource waste, environmentally and socially responsible company practices and public procurement, sound management of hazardous chemicals and waste etc. The TRAINS database prominently features

regulations that are relevant to Targets 12.4<sup>5</sup> and 12.5,<sup>6</sup> which are aimed at controlling and restricting transboundary movement of hazardous substances and waste, ozone-depleting substances, persistent organic pollutants and hazardous pesticides. This is largely since the signing of international agreements, such as the Basel Convention, Stockholm Convention, Rotterdam Convention, Minamata Convention and Montreal Protocol, which is a good illustration of the important role played by international collaboration in achieving SDGs. Trade in these goods is primarily regulated by technical regulations (product certifications, import/export permits, registration of goods/traders, traceability, labelling, marking, packaging etc.) as well as export controls, licensing and prohibitions. Recently, limitations have also been placed on the use and importation of single-use plastics, plastic waste and products that are sources of microplastics (box 1.3).

<sup>5</sup> 12.4 – By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

<sup>6</sup> 12.5 – By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.



### NTMs and plastic waste

Currently, approximately 300 million tonnes of oil-based plastic waste are produced every year (UNEP, 2018). A significant amount of plastic waste ends up in the oceans, having a detrimental effect on marine ecosystems and coastal communities. Most of this plastic waste enters the oceans in the Asia-Pacific region (Jambeck and others, 2015). If unaddressed, by 2050 there could be more plastic than fish in the oceans (WEF, 2016). Recognizing the problem, addressing plastic pollution in the ocean has been included in the 2030 Agenda for Sustainable Development in Target 14.1 (by 2025, prevent and significantly reduce marine pollution of all types, in particular from land-based activities, including marine debris and nutrient pollution), Indicator 14.1.1. (Index of coastal eutrophication and floating plastic debris density). It is widely acknowledged that regulating single-use plastics and microplastics is a major component in achieving this target (ESCAP, forthcoming). An increasing number of countries in the Asia-Pacific region and across the world are now introducing regulations addressing consumption, production and trade in single-use plastics and plastic waste.

Notably, the first country in the world to effectively ban the use of single-use plastic bags was Bangladesh. The rationale, however, was a disaster-risk reduction strategy – during a 1998 monsoon, it was estimated that clogging of 80% of city's runoff drains was caused by plastic bags (green page, 2016). As a result, two thirds of the country, including a large part of Dhaka, were under 12 inches of water for nearly two months. Following this disaster, the Cabinet banned the production and use of polyethylene shopping bags in Dhaka city from 1 January 2002. The penalty for importing plastic bags includes a prison term for up to 10 years and a hefty fine (though enforcement of the ban remains an issue).



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Mae Ramphueng Beach, Rayong, Thailand, May 2018

Perhaps the most stringent recent example of addressing single use plastics is in Kenya, where, since August 2017, producing, selling or even using plastic bags can result in four years in prison or a fine of up to \$40,000 (Reuters, 2017). Prior to the ban, plastics were ubiquitous on the streets, and 3 out of 10 animals in abattoirs were found to have plastics in their stomachs (Watts, 2018). Eight months after the introduction of the ban, the number has gone down to 1 in 10, and the streets are much cleaner. This, however, came at a significant cost – it was estimated that up to 60,000 jobs were lost as a result – as Kenya was a major plastic producer and exporter in the region with 176 plastic-producing companies. Highlighting the need for regional cooperation, due to the ban, illegal imports from neighbouring countries began to emerge, and the Government of Kenya is urging its neighbours to institute similar bans (McCarthy, 2018).

While many developed countries remain better at ensuring that plastics and other waste do not end up in waterways through provision of adequate refuse collection mechanisms (and littering fines), recycling remains an issue. This was seemingly addressed through exporting waste plastic for recycling to other countries, most significantly to China; since 1992, China imported almost half of the world's plastic waste for recycling (Brooks, Wang and Jambeck, 2018). However, recognizing the detrimental effect these imports were having on its environment and air quality, in 2018 the Government of China banned the importation of plastic waste. Brooks, Wang and Jambeck (2018) estimated that over the coming decades, as many as 111 million tonnes of plastic



(continued)

will have to find a new place to be processed or otherwise disposed of as a result of China's ban. The ban led exporters to seek other markets, and exports of plastic waste to other countries in the region, such as India, Indonesia, Malaysia and Thailand have skyrocketed. Expectedly, this resulted in deteriorating environmental situations in the recipient countries and generated backlash: following China's example, both Malaysia and Thailand have since banned the import of plastic waste (Daniele and Regan, 2019; Agence France-Presse, 2019).

Recognizing the detrimental effect of trade in plastic waste, on 11 May 2019 a total of 180 Governments (excluding the United States) adopted an amendment to the Basel Convention to include plastic waste in a legally-binding framework that will make global trade in plastic waste more transparent and better regulated, while also ensuring that its management is safer for human health and the environment (UNEP, 2019). According to this Agreement, exporting countries – including the United States – will now have to obtain consent from countries receiving contaminated, mixed or unrecyclable plastic waste (ICNTM classification chapter E – non-automatic licensing).

### 3. Goal 16: Peace, justice and strong institutions

Within Goal 16, Target 16.4 (Reducing illicit financial and arms flows), NTMs include those that are used to curb trade in arms, ammunitions, dual-use goods that could be used to make chemical, nuclear and biological weapons and their delivery systems as well as goods suitable for making improvised explosive devices. Import and export measures that are typical for regulating trade in controlled goods are prominent here, while some export measures are applied on a bilateral basis targeting specific countries.

Additionally, relevant to this target are NTMs aimed at controlling international trade in precious stones and metals as well as other valuable minerals, as such trade may generate illicit financial flows, which in turn may fuel all forms of human rights abuses and violence, and finance armed conflict. These NTMs typically consist of certification schemes that require companies engaged in such trade to implement due diligence with regard to the sources of traded goods, and to ensure full transparency and traceability of the entire supply chain of the minerals. One example featured in the TRAINS database is that of national

regulations based on the standards of the Kimberley Initiative Certification Scheme for rough diamonds. Another notable example pertains to similar regulations for trade in tin, tungsten, tantalum and gold, such as the Dodd-Frank Act Section 1502 of the United States, detailing measures to ensure responsible sourcing of these four metals from the Democratic Republic of the Congo and its neighbouring countries.<sup>7</sup> Relevant measures affecting trade are inspection, certification and auditing of mine sites/smelters/refineries, mineral chain of custody tracking and mineral tracking databases (traceability), registration of exporters and importers, mineral export certification and permits, licencing, pre-shipment inspection, marking and transportation in tamper-proof containers. While these measures may in principle support achievement of SDG 16, they also make it more difficult to produce and trade, with a potential negative impact on other SDGs and targets. Caution should be exercised when introducing such NTMs as they can have unintended consequences (box 1.4).

*“Short-sighted implementation of NTMs to address one Goal may have unintended adverse effects on other Goals.”*

<sup>7</sup> The latter is not present in the TRAINS database, but it is likely that such measures will be recorded as more countries adopt related regulations. For example, from 1 January 2021, the European Union will enact Regulation (EU) 2017/821 of the European Parliament, and of the Council of 17 May 2017 laying down supply chain due diligence obligations for the European Union importers of tin, tantalum and tungsten, their ores, and gold originating from conflict-affected and high-risk areas.



### Controlling trade in conflict minerals: unintended consequences

Section 1502 of the United States Dodd-Frank Act was enacted in 2010 (mining.com, 2017). This regulation requires publicly traded companies to ensure that the raw materials (particularly tin, tungsten, tantalum and gold) they import to make their products were not tied to the conflict in the Democratic Republic of the Congo or its neighbouring countries. This was meant to ensure that “conflict mineral” proceeds did not contribute to civil wars or terrorism (in essence addressing SDG 16 – Peace and security). The legislation was largely successful through reducing militia revenue from mining of raw materials. However, it also produced unintended consequences, negatively affecting other aspects of sustainable development.

As a direct result of this legislation, it has been estimated that 8 to 10 million people who depended on mining experienced loss of income as some buyers avoided trade with those countries altogether, and artisan miners found it difficult to obtain required certification (Parker, Foltz and Elsea, 2016). This increase in poverty has further been identified as a key contributor to a sharp decrease in “consumption of infant health care goods and services.” As a result, infant mortality in areas close to regulated mining sites increased by 143% since.

### Other SDG Targets affected by NTMs

There are examples of other, less frequent measures for certain products that can potentially have a significant impact on other SDGs. Technical regulations on water and energy efficiency targeting water and energy using appliances, equipment and machines are relevant to Target 6.4 (“...substantially increase water-use efficiency across...” all sectors and Target 7.3 (“...double the global rate of improvement in energy efficiency...”). Reduction of pollutant and noise emissions from transport, machines and equipment used in the cities can contribute to Target 11.6 (“...reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality...”). NTMs can play a significant role in protecting the world’s movable cultural heritage, which is relevant to Target 11.4 (“...protect and safeguard the world’s cultural and natural heritage.”). Trade-related measures described in the 2001 International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU) – which was adopted to facilitate sustainable sourcing of fish and to reduce the impact of fishing on the marine environment and on the health of fish stocks – are relevant to Target 14.4 (“...regulate harvesting and end overfishing, illegal, unreported and unregulated fishing...”) and Target 14.6 (“...eliminate subsidies that contribute to illegal, unreported and unregulated fishing...”). Finally, NTMs are used to

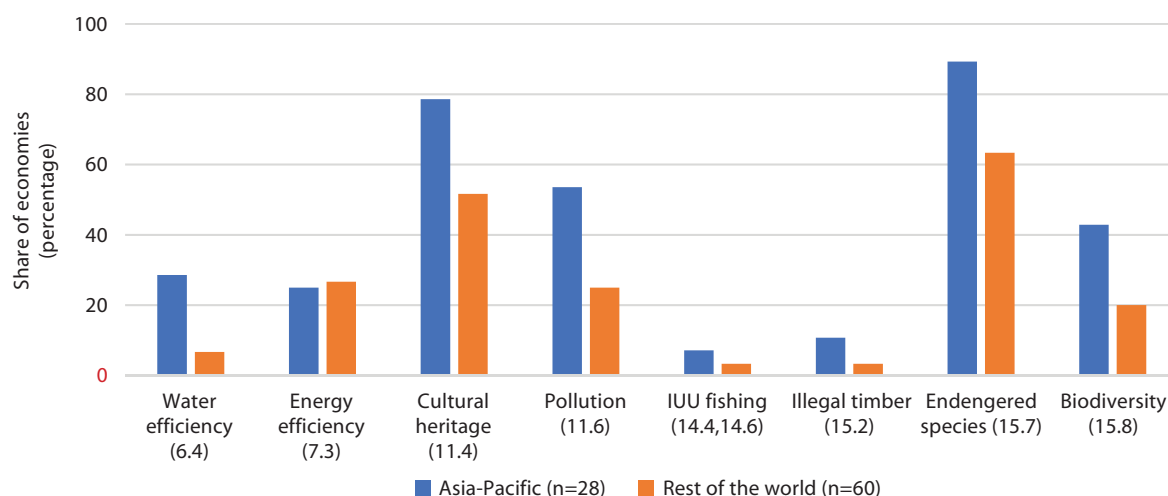
regulate trade in endangered species of flora and fauna (Target 15.7, “...end poaching and trafficking of protected species of flora and fauna...”), to curb trade in illegally and unsustainably harvested timber (Target 15.2, “...sustainable management of all types of forests...”) and to control transboundary movement of the invasive species that may threaten biodiversity (Target 15.8, “...reduce the impact of invasive alien species...”).

Figure 1.5 depicts the share of economies for which NTM data are available (88 globally, with the European Union counting as a single economy) and that have at least one NTM in place to address the targets described above. In all but target 7.3 (doubling the global rate of improvement in energy efficiency), the Asia-Pacific region is ahead of the rest of the world – i.e., more countries in this region have NTMs directly supporting these SDG targets. While most economies in the region use NTMs to address Target 15.7 (regulating trade in protected species) and, to a lesser extent, Target 11.4 (protecting cultural heritage), the lack of trade regulations addressing other feasible targets is a cause for concern.

*“There is scope for member States in the region to address certain aspects of sustainable development through trade measures that are currently missing.”*



Share of economies with at least one NTM addressing specific SDG targets



Source: ESCAP calculations based on UNCTAD TRAINS database and methodology developed by ESCAP and UNCTAD (Kravchenko and others, 2019).

For example, less than 50% of economies have at least one NTM addressing water and energy efficiency (Targets 6.4 and 7.3), and only approximately 10% have measures addressing IUU and illegal timber trade (Targets 14.4, 14.6 and 15.2). As such, there appears to be more scope for member States in the Asia-Pacific region to address these aspects of sustainable development through trade measures. Caution should be exercised, however, to ensure that any such measures do not place an unnecessary burden on compliant traders. Furthermore, any regulations must be non-discriminatory in nature, meaning both foreign and the domestic producers are affected equally. Last, having regulations in place is of no use if they are not effectively enforced; UNODC (2019) reported that South-East Asia, despite a continued crackdown on

poachers, remained a hub for illegal wildlife and timber trade.

Concerning SDG 2 (No hunger), Target 2.4 (resilient agricultural practices) is addressed by SPS measures and some other NTMs being applied to agricultural raw materials and related products that may harbour dangerous pests, disease-carrying or disease-causing organisms. Target 2.b (agricultural export subsidies) also specifically mentions the need to eliminate harmful export subsidies and all export NTMs with equivalent effects in order to achieve Goal 2. Like the subsidies on fisheries, however, relevant data have not yet been part of the systematic data collection by UNCTAD and its partners, although subsidies are one of the few examples of NTMs that are explicitly included in the SDG framework (box 1.5).<sup>8</sup>

<sup>8</sup> As of August 2019, SDG indicator values on agricultural subsidies were not available.



### Subsidies as NTMs: trade rules and links to sustainable development

Chapter L of the ICNTM classification is dedicated to subsidies, and chapter P7 is specifically dedicated to export-related subsidies. According to the WTO Agreement on Subsidies and Countervailing Measures, subsidies that are intended to meet export targets or for import substitution are outright prohibited, and are handled under an accelerated timetable in the WTO dispute settlement process (WTO, 2019a). Subsidies for other reasons are permitted, so long as they do not have an adverse impact on interest of trade partners. In cases where a subsidy adversely affects one or more other WTO members, according to the Agreement, the subsidy in question must be withdrawn, or a countervailing duty may be imposed. For example, in August 2019 the European Union imposed countervailing duties of up to 18% on imports of subsidized biodiesel from Indonesia, saying the move aimed to restore a level playing field for European Union producers (European Commission, 2019). Least developed countries and developing countries with less than \$1,000 per capita gross national product (GNP) are exempted from disciplines on prohibited export subsidies.

Agriculture-specific subsidies fall under Article 6 of the WTO Agreement on Agriculture. Subsidies that are used to support prices, or subsidies directly related to production quantities are permitted to a limited extent – generally 5% of the product value for developed countries, 10% for developing countries (WTO, 2019b). Article 6 of the Agreement also gives developing countries flexibilities in providing domestic support for the purposes of their development programme, designed to encourage agricultural and rural development. The reduction of agricultural export subsidies is a key staple of WTO Agenda, and the 2030 SDGs under Target 2b (Trade distortion in agricultural markets), Indicator 2.b.1 (Agricultural export subsidies). It is worth to note that the total agricultural subsidies by the WTO members decreased from \$4.6 trillion in 1995 to \$180 billion in 2014 (United Nations, 2018, as cited by Kravchenko, 2018).

Fisheries subsidies can contribute to overfishing and overcapacity, as well as illegal, unreported and unregulated (IUU) fishing. They are explicitly addressed by SDG Target 14.6 which seeks to “...prohibit certain forms of fisheries subsidies...”. Negotiations on fisheries subsidies were launched during the WTO Doha round and are currently ongoing (WTO, 2018). The negotiations have been quite challenging, with the main concern being on balancing public policy concerns, especially for developing countries and LDCs (Bahety and Mukiibi, 2017). At the eleventh Ministerial Conference, WTO members agreed to continue to engage constructively in the negotiations, with a view to adopting an agreement by the Ministerial Conference in 2019 (Kumar and Chakradhar, 2019).

According to data from Global Trade Alert (2018), an independent monitor of policies that affect global trade, among the different categories of discriminatory measures,<sup>a</sup> subsidies were the most frequent, both globally and in Asia and the Pacific (ESCAP, 2018). In 2018, about 30% of the discriminatory measures were subsidies provided to producers, and another 12% were subsidies to exporters.

<sup>a</sup> A discriminatory measure is defined by the Global Trade Alert as an intervention that almost certainly discriminates against foreign commercial interests (Global Trade Alert, 2018).

## B. INDIRECT EFFECTS AND NON-TARIFF MEASURES THAT HAVE NO DIRECT LINKS TO THE SUSTAINABLE DEVELOPMENT GOALS

As noted above, the focus of the analysis has been on identifying NTMs with a direct intended (and positive) impact on the achievement of SDG targets (stated or implied). However, it is important to acknowledge that NTMs may be linked to SDGs in various ways.

Apart from the above examples describing very close connection of product-NTM pairs to more than one SDG, there are examples of more subtle linkages. Taking a gender focus, for example, in addressing Target 3.5, NTMs aiming to control and reduce use of alcohol and narcotic drugs (Target 3.5) can also reduce violence against girls and women (SDG Target 5.2), including by intimate partners. Safe cities and inclusive urban environments, which are the objective of SDG 11, can reduce gender-based violence by persons other than intimate partners (Target 5.2) and contribute to women's and girls'

productive involvement in employment and education (Target 5.5). Target 5.6 on universal access to sexual and reproductive health and reproductive rights is partially addressed by SDG 3 (Health and well-being). In the case of NTMs on responsible practices by private and public sectors in supply chains, addressing Targets 12.6 (“Encourage companies ... to adopt sustainable practices...”) and Target 12.7 (“Promote public procurement practices that are sustainable...”), can contribute to equal employment opportunities and equal pay for work of equal value, regardless of gender.

*“NTMs sometimes have other important – but not directly related to SDGs – public policy objectives, and some NTMs affect sustainable development indirectly.”*

Another case of indirect impact of NTMs that is well-described in literature is the negative impact of NTMs on access to goods and technologies relevant to various SDGs. This may be due to the significant discrepancies in mandatory technical regulations between trading countries. This applies to cases where some such regulations are intentionally excessively strict as well as cases where discrepancies exist due to differences in technological development between countries. Some regulations directly relevant to certain SDGs may indirectly pose barriers to access to goods and technologies relevant to other SDGs. Specifically, intellectual property rights (IPRs) measures are essential for SDG 9 and SDG 16, as they can encourage innovation, contribute to economic development, help combat illicit and counterfeit trade and reduce cash flow generated by it. However, they are also known to pose barriers to the access to medicines and medical technologies, technologies and goods relevant to Targets on renewable energy, energy and water efficiency, climate mitigation and adaptation, information and communications technology (ICT) and sustainable technologies used in various industries.<sup>9</sup> Controls on trade in dual-use technologies, relevant to SDG 16, similarly restrict access to goods relevant to other SDGs, as they

target a very wide range of goods that are also essential as production inputs and components of information and communication systems, including those used in early warning systems for natural disasters.

Another issue that is related to non-tariff trade policies, but which is not reflected in the NTM databases, is the procedural obstacles associated with NTM implementation. Poor implementation of legitimate and justified NTMs may limit access of vulnerable populations to essential products or limit the ability of traders, especially small and medium-sized enterprises (SMEs), to enter foreign markets (Target 9.3, Increase access of small-scale enterprises into value chains and markets) (see chapter 2, section C).

It is also important to emphasize the fact that the positive direction of the intended impact of an NTM on an SDG’s achievement is inferred from its stated public policy objective or implicit intention. The actual impact of an NTM is usually much broader than the stated objective and the regulated economic sector. Moreover, different contexts of adopting and affected countries (geographical, historical, economic, institutional, regulatory etc.) can heavily influence the impact of an NTM on the ground – and even the direction of impact, particularly if enforcement is weak. One such example, which is given in box 1.1, describes the effects of the anti-IUU fishing legislation imposed by the European Union on imports of seafood from Sri Lanka. Although the implementation of regulatory impact and sustainability impact assessment at the stage of NTM design is a globally accepted best-practice, countries do so rather inconsistently, if at all.

Finally, many NTMs were found to have no direct linkages to SDGs. This is not to say that they lack public policy objectives. For example, while motor vehicle safety can be linked to reducing traffic accident fatalities (Target 3.6), safety of consumer and commercial products cannot be directly linked to any SDG Target. In addition, some measures have an indirect impact on SDGs. Foodborne diseases,

<sup>9</sup> In 2003, WTO members agreed on legal changes that make it easier for poor countries to import cheap generic drugs if they are unable to manufacture the medicines themselves (Novak, 2003). Originally, according to the WTO Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement, countries could produce but not export drugs that are excluded from patent restrictions in order to “protect human, animal or plant life or health”, thereby restricting those who do not have manufacturing capacity from accessing life-saving medicines.

while claiming nearly 500,000 deaths annually, are not specifically addressed by SDGs, but are arguably the main focus of most technical measures.<sup>10</sup> Finally, some NTMs have a negative impact on SDGs (such as agricultural export subsidies), and hence not having them, contributes to the achievement of SDGs. However, as above discussed, a lack of comprehensive data sources inhibited their inclusion in the analysis.

Although SDGs represent global development priorities, as transpires from the nature of the majority SDG targets and their indicators, SDGs are to be primarily achieved through the implementation of national policies within the borders of the adopting countries. NTMs have a special place in the overall regulatory framework of countries, as by regulating goods that are moving across the borders, NTMs allow governments to address some critical issues within the jurisdictions of other states. Good examples here are measures aimed at preventing imports of conflict minerals (SDG 16), illegal timber and fish (SDG 15 and 14), unsustainably produced products (SDG 12), illegally obtained cultural heritage items (SDG 11), which attempt to affect relevant regulations and production patterns in the exporting countries. Technical measures aiming to address product quality, while potentially directly addressing some aspects of SDGs domestically, also can

potentially spillover into addressing SDGs in trade partner economies.

## C. CONCLUSION

This chapter linked NTMs to the 2030 Agenda for Sustainable Development. As emphasized, NTMs are not inherently good or bad – they can be important tools in achieving SDGs. At the same time, the proliferation in NTMs globally and within the Asia-Pacific region means that they are now a more significant deterrent to trade than ordinary customs tariffs. The key challenges for policymakers are evaluating whether NTMs are the most effective tools for achieving the public policy objectives and, if so, how to strike the right balance between their positive (intended) effects and cost to traders (and ultimately consumers) associated with them. In many cases, reducing the cost to traders does not mean outright removal of NTMs (which may indeed be a viable option for some), but rather ensuring that NTMs are coordinated across economies and that associated procedural obstacles do not create an unnecessary burden on traders. As such, chapter 2 presents estimates of costs associated with NTMs, the impact of NTMs on trade and investment as well as the issues pertaining to the procedural obstacles that exist because of NTMs.

<sup>10</sup> In this study they are deemed relevant to SDG Target 3.4, which seeks to reduce premature mortality from non-communicable diseases, although the indicators for the Target specify cardiovascular disease, cancer, diabetes, chronic respiratory disease and suicide as the quantifiable incidences of non-communicable diseases.

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## ONLINE DATABASE

UNCTAD. Trade Analysis Information System (TRAINS) database. Available at <https://trains.unctad.org/>.







# Evaluating the impact of non-tariff measures on trade and investment in Asia and the Pacific

The previous chapters introduced NTMs, outlined trends in the Asia-Pacific region and explored the links between NTMs and SDGs. As noted, NTMs often serve legitimate and necessary purposes, such as protection of human, animal and plant health, and the environment. Indeed, not having NTMs in place, or their poor enforcement, may in some cases have devastating effects on trade and sustainable development (box 2.1). At the same time, however, NTMs do add costs to trade. In this context, this chapter examines the effects of NTMs on trade and present estimates of costs associated with NTMs. The chapter also discusses the effects of NTMs on foreign direct investment (FDI), using sectoral case studies. Finally, a regional analysis of national private sector surveys conducted in selected Asian countries provides insights on how much – and how – various NTMs affect those engaging in international trade.

*“Not having certain NTMs or their poor enforcement may have a detrimental effect on sustainable development.”*



### The costs of not having NTMs or their poor enforcement

On 5 November 2010, *Pseudomonas syringae* pv. *Actinidiae* (Psa) – a bacterial disease – was first detected in New Zealand in one kiwifruit orchard. While posing no threat to other plants, humans or animals, it devastated kiwifruit exports from New Zealand – a billion dollar industry at that time (New Zealand Herald, 2010). By 2011, the disease had spread to other farms across the country, eventually infecting 80% of kiwifruit orchards nationwide (Boot, 2018). In the subsequent investigation, it was determined that the most likely source of Psa was contaminated imports of pollen from China (Butler and others, 2013). New Zealand's Ministry of Agriculture and Forestry (MAF) was blamed for the breach of its duty to care, including no formal risk analysis sign-off by MAF personnel before the import was permitted. Subsequently, a class action suit was filed by 212 growers accusing MAF of being negligent under the Biosecurity Act. The net present value of losses over 15 years were estimated to be up to NZ\$885 million (Greer and Saunders, 2012). The High Court of New Zealand has ruled in favour of the growers, who claimed NZ\$450 million in damages. The decision, however, was later appealed (New Zealand, 2019).

Similarly, the recent outbreak of the African swine fever (ASF) in parts of the East, North-East and South-East Asian subregions can be blamed on contaminated imports and inadequate SPS monitoring. The virus was previously present in the North and Central Asian economies of Armenia, Azerbaijan, Georgia and the Russian Federation (FAO, 2009). The diseases, first reported on 3 August 2018 in China, spread across that country before crossing the border into Cambodia, the Lao People's Democratic Republic, Mongolia, the Democratic People's Republic of Korea, the Philippines, the Republic of Korea and Viet Nam (Economist, 2019; FAO, 2019). While the disease is not harmful to humans, it kills up to 100% of infected pigs (FAO, 2019). Rabobank (2019) estimated that ASF could reduce China's pork production by 25% to 35%, or up to 200 million pigs. This is expected to increase pork prices by 70% in the second half of 2019 (Economist, 2019). This is a significant figure, since pork accounts for almost 3% of the Chinese consumer price index (Bloomberg, 2018). In addition, OECD and FAO (2019) have estimated that to compensate for the decrease in domestic production, China's share of world imports of pork would increase from 17% in 2018 to 23% in 2020.

## A. EFFECTS OF NON-TARIFF MEASURES ON TRADE

*“NTMs can provide quality assurance and a safety guarantee as well as indicate consumer preferences, which lead to trade-enhancing effect.”*

The trade effects of NTMs can be quite substantial in a world of deepening economic integration and increasingly linked cross-border production in the form of regional and global value chains (GVCs). NTMs, in general, are not as transparent as tariffs, and their implementation is not always efficient, thus incurring a trade-cost effect. Furthermore, it is not possible to claim refunds and drawbacks on expenditures on most NTMs, unlike tariffs (which can be claimed on re-exports); their effects on costs are accumulative along the value chains. However, for certain sectors, they can provide quality assurance

and a safety guarantee as well as indicating consumer preferences, which can have a trade-enhancing effect (box 2.2).

As discussed in the introductory chapter, the number of NTMs per economy in the Asia-Pacific region ranges from less than 50 in Tajikistan to more than 7,000 in China. The number of measures, however, is a poor gauge of the pervasiveness and trade effects of non-tariff regulations. Some measures may affect only one or a few products, whereas other measures may affect many. Furthermore, economies that do not trade in certain products have low incentives to adopt regulations affecting such trade. Conversely, economies that are highly integrated in GVCs, and which trade extensively in many product categories, tend to regulate more. In addition, some individual measures may be highly trade-restrictive (such as stringent SPS requirements), whereas others may be less restrictive (such as compulsory registration for importers). As such, a more


**Box  
2.2**
**Separating trade creating from trade inhibiting effects of NTMs**

In order to evaluate the effects of NTMs on trade, ESCAP has conducted an econometric analysis of NTMs effects on trade flows (see online annex).<sup>a</sup> When controlling for all variables that typically explain trade between countries (i.e., level of development, distance, tariffs etc.), the incremental effect of an additional NTM (across all products) has been found to actually increase imports by 1.8%.

When separating NTMs into technical and non-technical measures, the analysis shows that an increase by one in the average number of technical NTMs applied to trade partners increases imports by 2.4%. This implies that having more technical measures in place creates a demand effect, whereby consumers (whether final or intermediate) are more confident in the quality of the product and therefore demand more. At the same time, an increase in the average number of non-technical measures by one decreases imports by 17%. As such, it could be concluded that technical measures (SPS and TBTs) are generally trade-creating, whereas non-technical measures such as quotas, price-control measures and finance measures (see table 1 in the Introduction on page 6) act as a deterrent to trade.

Caution, however, should be exercised when interpreting these high-level results, since excessive regulation, whether trade-creating or not, as a rule increase trade costs (see further discussion in this section). As such, there is a real risk of “over-regulating”, where any trade-creating effects of NTMs are offset by increases in trade costs. What is paramount for any regulations is ensuring that their introduction does not unnecessarily burden traders with excessive costs that may reduce overall welfare, whether supporting overall levels of trade or not. In addition, as chapter 1 demonstrates, trade is but one consideration of NTMs; other important public policy objectives – including meeting SDGs – should be considered.

Source: Utoktham (forthcoming).

<sup>a</sup> <http://unescap.org/resources/aptir-2019-online-annex-data-and-methodology-assessing-impacts-non-tariff-measures-trade>

sophisticated analysis is required to measure the pervasiveness of NTMs, as well as to fully gauge their effect on trade.

## 1. Intensity of NTMs: how much is trade affected by NTMs and to what extent?

*“57% of imports in the Asia-Pacific region are covered by at least one NTM and, on average, each imported product faces 2.5 NTMs.”*

Two descriptive indicators commonly used to quantify the intensity of NTMs are coverage ratio and prevalence score (UNCTAD and World Bank, 2018). The coverage ratio captures an economy’s share of trade subject to NTMs, and the prevalence score indicates an economy’s average number of distinct NTMs that are applied to regulated products.<sup>1</sup> In general, less developed economies have lower

coverage ratios and lower prevalence scores. Based on available data in the Asia-Pacific region, approximately 58% of trade volume is covered by NTMs, and each product faces 2.5 NTMs on average (figure 2.1). The region’s coverage ratio and prevalence score are on a par with the global average of 57% for coverage ratio and a prevalence score of 2.5.

*“83% of agricultural imports in Asia and the Pacific is covered by at least one NTM, with an average product facing more than 7 separate NTMs when imported.”*

Sector-wise, agricultural products are generally more heavily regulated, with nearly 100% of trade volume being subject to at least one NTM in the European Union and the United States, and 83% in Asia and the Pacific (figure 2.2). While manufacturing and natural resource products are subject to fewer than

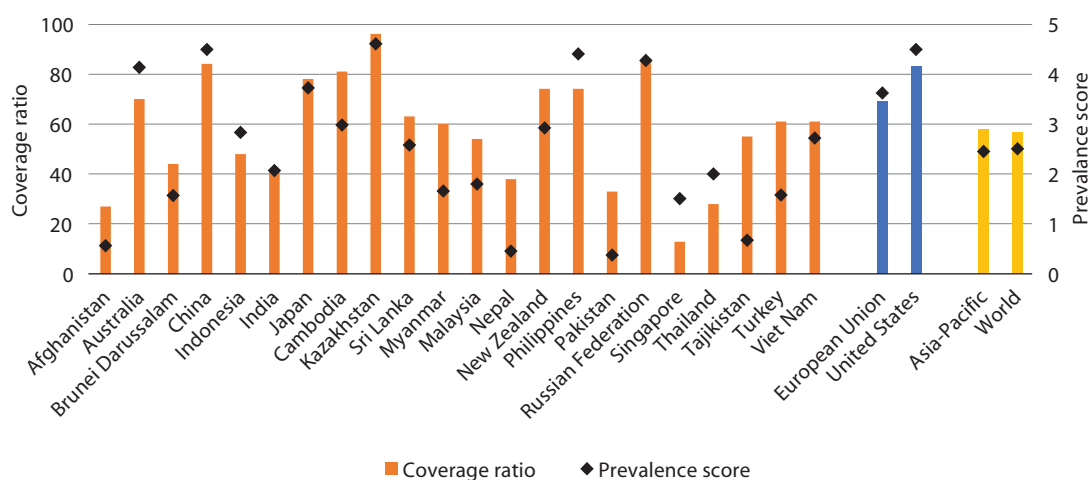
<sup>1</sup> Products are defined according to the Harmonized Commodity Description and Coding System.

two NTMs on average globally and in Asia and the Pacific, agricultural products are subject to approximately nine different NTMs globally, and eight in the Asia-Pacific region. Notably, the developed economies of the European Union and the United States impose, on average, 15 and 13 NTMs on

imports of agricultural products, respectively. In the Asia-Pacific region, the highest prevalence scores on agricultural products are in China (16), and the Philippines and Australia (15), while the lowest score is in Nepal with only one measure imposed, on average.

**Figure 2.1**

**Coverage ratios and prevalence scores of NTMs**

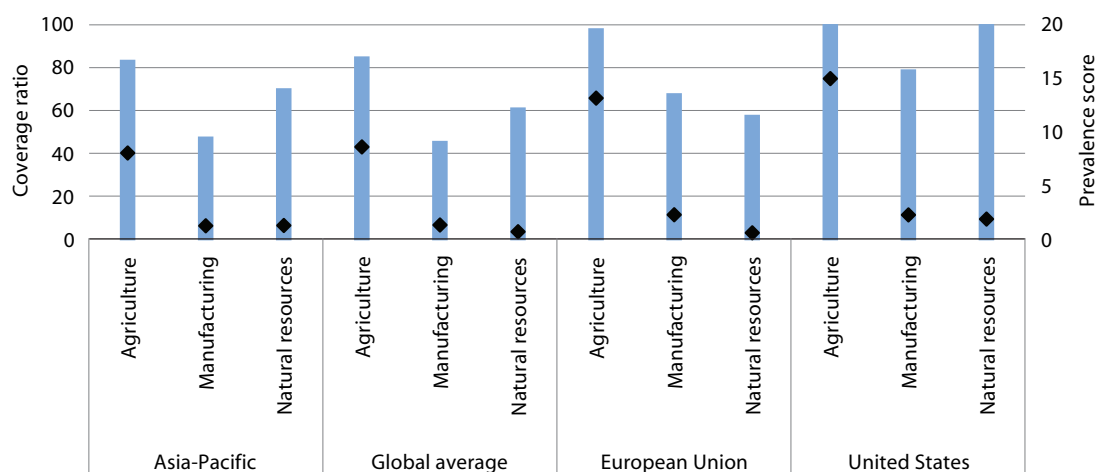


Source: UNCTAD, NTM hub: Data on non-tariff measures (accessed 1 May 2019).

Note: Averages are simple averages of the indicators.

**Figure 2.2**

**Coverage ratios and prevalence scores of NTMs, by sector**



Source: UNCTAD, NTM hub: Data on non-tariff measures (accessed 1 May 2019).

Note: Averages are simple averages of the indicators.

## 2. Trade costs of NTMs

The impact of NTMs on trade can be quantified by estimating the ad valorem tariff equivalent (AVE) of NTMs, i.e., calculating the level of an ad valorem tariff that would have an equally trade-restricting effect as an NTM. Using the UNCTAD TRAINS database on NTMs, United Nations Comtrade data on trade flows as well as other databases on economic statistics and trade indicators, ESCAP calculated the AVEs of technical and non-technical non-tariff measures.<sup>2</sup> As noted in chapter 1, technical measures comprise more than 90% of import-related measures currently available through the TRAINS database.

*“The average trade costs of NTMs in the Asia-Pacific region are 8.2% and 7.1% for technical and non-technical measures, respectively.”*

The global average AVE of technical NTMs is 6.8%, and 3.3% for non-technical measures.<sup>3, 4</sup> The averages in the Asia-Pacific region are 8.2% and 7.1% for technical and non-technical measures, respectively. In 2016, the applied tariffs were only 5% and 5.8% globally and in Asia and the Pacific, respectively. As such, NTMs – particularly in certain sectors (see next subsection) – now impose higher costs on trade than ordinary customary tariffs. Technical measures are estimated to cost as much as 1.6% of global GDP (box 2.3).

*“Even though the European Union and the United States impose more NTMs, their trade costs are lower than in Asia and the Pacific.”*

Figure 2.3 shows import-weighted AVEs of technical NTMs imposed by Asia-Pacific economies, the

European Union, the United States and the rest of the world (RoW) for which sufficient data were available to allow estimation. Notably, both the European Union and the United States have lower overall costs of NTMs, as well as non-technical measures in particular, than global averages and all individual subregions in the Asia-Pacific region. This is likely due to those economies having relatively streamlined importing procedures as well as their adherence to international standards.<sup>5</sup> As such, although in absolute terms, the European Union and the United States have above average coverage ratios and prevalence scores of NTMs, their effects on price are lower as measured by AVE estimation. The private sector survey analysis presented in section C below gives further credence to this conclusion since developed economies with a high level of digital trade facilitation generally attract fewer complaints of burdensome NTMs from traders.

Conversely, looking at AVEs of NTMs that exporters in Asia-Pacific subregions face (figure 2.4) shows that the costs of Asia-Pacific exporters are generally lower than those of importers in the same subregions (i.e., when comparing with figure 2.3). This is, in part, due to the European Union and the United States – major markets for Asia-Pacific exporters – having generally lower costs associated with NTMs. This may seem paradoxical, as previous discussion has noted their higher than average coverage ratios and prevalence scores of NTMs. However, the lower costs can be, in part, attributed to the relatively efficient trade procedures of these economies (i.e., enhanced trade facilitation). The European Union and the United States, on the other hand, face higher costs than what they impose because their export markets and product mixes have relatively higher NTM-related costs; this is due, in part, to the Asia-Pacific

<sup>2</sup> The AVEs are estimated through gravity modelling. In essence, the technique relies on attributing the difference in the price of imports of merchandise goods (derived through dividing value imported by quantity imported) to the number of NTMs facing those goods at the bilateral level, while accounting for other potential explanatory variables, such as distance, gross domestic product (GDP), tariff levels etc. See Kravchenko and others (2019) for details.

<sup>3</sup> Caution, however, should be exercised when interpreting these figures as data limitations mean that in some cases only a limited volume of trade data that had sufficient information on NTMs were used in estimation. Furthermore, these estimates are trade-weighted, meaning that high AVEs for products that are imported receive more weight. Conversely, products that are not heavily imported receive less weight, meaning that some NTMs that may be very restrictive receive relatively less weight. As such, two countries that have essentially the same NTM profiles (such as in the case of members of the European Union) may have different AVEs of NTMs because of their differing import product mix. Furthermore, as discussed in section C below on the private sector perspective, it is often not NTMs that are deemed burdensome (and thus raise costs), but related procedural obstacles.

<sup>4</sup> UNCTAD and World Bank (2018), using a different (quantity-based) methodology, estimated AVEs of 11% for technical measures and 9% for other types of measures.

<sup>5</sup> For example, even though the European Union has higher coverage ratio and prevalence score of NTMs than India (see figure 2.1), the Indian Council for Research on International Economic Relations (ICRIER) reports that despite recent advancements in import facilitation: “the time and cost to import [food products] into India is still significantly high and there is a need to further streamline the import process” (ICRIER, 2019).

### Box 2.3

#### The cost of technical regulations

While AVEs can give an idea of the costs associated with NTMs for certain traded products, due to the pervasiveness of value chains, the effects on the global welfare are accumulative and, as such, trade costs underestimate their net effect. One way to obtain a sense of the true costs of NTMs is through using computable general equilibrium (CGE) modelling, which takes into account these linkages. By assuming that removal of technical NTMs is equivalent to improvements in efficiency of imports, the estimated AVEs of technical measures are introduced in the global CGE model (Global Trade Analysis Project (GTAP)). When such efficiencies are introduced, global GDP is estimated to increase by 1.6%, i.e., \$1.4 trillion.

These estimates, however, should be considered as upper bounds of true costs because not all costs associated with NTMs are wasteful. For example, some payments made to government agencies are added to the national budget. In addition, the estimates do not include the positive effects of NTMs on trade (box 2.2), as well as benefit derived from protecting animal and human health (box 2.1), and the environment.

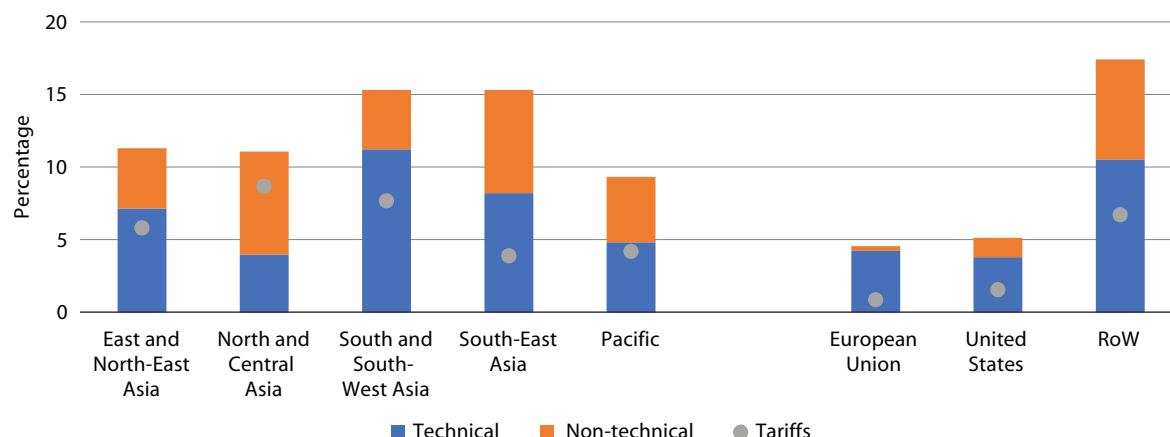
While outright removal of technical NTMs is not suggested (see chapter 1 on the importance of NTMs and box 2.1 in this chapter on what can happen if those NTMs are not implemented properly), the estimate does show that these public policy objectives carry a significant cost. The key is to ensuring that while public policy objectives are met, traders are not unnecessarily burdened, and that these costs are minimized. In general, according to OECD (2016), these costs include:

- Information costs – associated with finding information on NTMs and related procedures;
- Conforming assessment costs – associated with proving that products meet the required standards;
- Specification costs – changing product/production processes in order to meet NTMs of importing countries.

As such, reducing costs associated with NTMs can be addressed through each of the above components. Addressing information costs requires a greater degree of transparency and notification. Conformity assessment costs may be addressed through mutual recognition arrangements (see chapter 4) and specification costs are minimized through harmonization between economies as well as adherence to international standards (see chapter 3). Through addressing each component of the costs associated with NTMs it is, in principle, possible to effectively achieve intended public policy objectives, including those embedded in the 2030 Agenda for Sustainable Development.

Figure 2.3

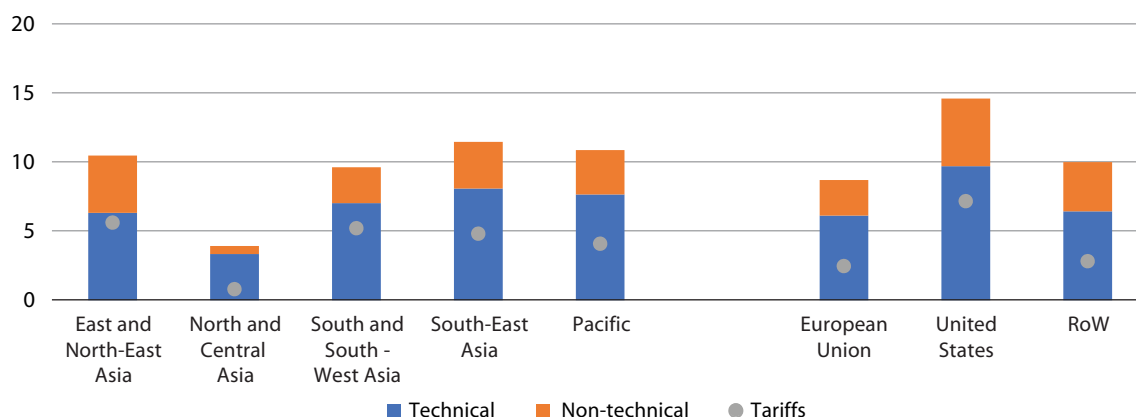
Import-weighted tariffs and AVEs of NTMs imposed by economies, by subregion



Source: ESCAP calculations.

**Figure 2.4**

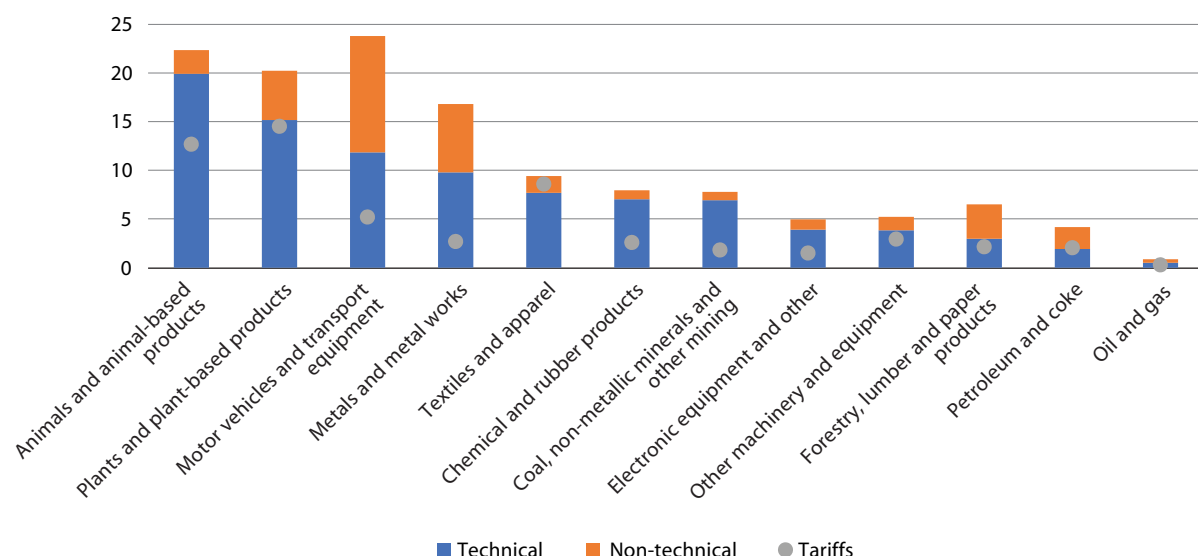
**Import-weighted AVEs of NTMs and tariffs faced by exporters, by subregion**



Source: ESCAP calculations.

**Figure 2.5**

**Import-weighted AVEs of NTMs and tariffs, by sector**



Source: ESCAP calculations.

economies having, on average, lower trade facilitation achievements (see section C).

*“Animal and plant-based products have the highest trade costs of NTMs, followed by motor vehicle and transport equipment sectors.”*

Sector-wise disaggregation of AVEs of technical NTMs shows that, in general, food and food-related products face the higher costs associated with

NTMs, mainly due to technical measures (figure 2.5). The motor vehicle and other transport sector is the third-most affected by technical NTMs, also attracting the highest costs of non-technical measures among all sectors. Notably, oil and gas, together with petroleum and coke, attract relatively lower levels of NTMs. This is because economies generally try to minimize the costs of intermediate goods (even subsidizing consumption in some cases) to ensure the competitiveness of exported products.

It is also important to note that costs associated with NTMs in different sectors are not uniform across subregions. For example, in terms of technical measures, plants and plant-based products have the highest AVEs in South and South-West Asia at more than 40%, whereas in other subregions the costs are well below 20%. For motor vehicles and other transport, AVEs of technical measures in East and North-East Asia are 30%, whereas they are half that in other subregions. The large difference among AVEs of NTMs for similar products suggests that harmonizing NTM regimes can significantly reduce trade costs.

### 3. Regulatory distance

While coverage ratios and prevalence scores describe the amount of trade covered by NTMs and the average number of NTMs facing each imported product, these figures do little to highlight the differences between economies, in terms of their overall NTM regulations. One simple measure for examining such differences proposed by UNCTAD (2015) is regulatory distance. This measures the degree to which regulations of the same type are applied by two economies to each product, and is a potential indicator of NTM harmonization. Specifically, this indicator compares NTM profiles of two economies and assigns a value of 0 when both economies regulate imports of a product using the same NTM (or, equally, both do not), and 1 when either economy regulates import of a product and the other does not. These values are summed up and divided by the number of observed product-NTM combinations.

The regulatory distance indicator ranges between zero, meaning that NTMs are completely harmonized (such as in the case of the members of the European Union) and 1, meaning that NTM profiles are diametrically opposed. Excluding the special case of the European Union, for all the available pairs of economies for which NTM data are available, the indicator ranges between the values of 0.02 and 0.32, with a global simple average of 0.11. The simple average for the Asia-Pacific region is 0.12, suggesting that NTM regulations may be slightly less harmonized among the countries of the region than globally.

*“The high average regulatory distances among economies in Asia and the Pacific strongly puts forward a case for regulatory harmonization.”*

Figure 2.6 depicts simple averages of regulatory distance scores of Asia and the Pacific economies with their regional trade partners. China’s high NTM coverage ratio and prevalence scores mean that its NTM regulation is quite different from that of other economies in the Asia-Pacific region, resulting in a high average regulatory distance score (0.22). The Philippines follows closely with an average ratio of 0.20. Notably, the bilateral regulatory distance between the Philippines and China is the highest in the region (0.28), suggesting that considerable scope exists for harmonizing bilateral regulations and enhancing trade between the two countries.<sup>6</sup>

*“North and Central Asia economies have the most harmonized regulations in Asia and the Pacific.”*

Table 2.1 presents average regulatory distance scores within and among the subregions in Asia and the Pacific, together with the European Union and the United States, calculated using the latest UNCTAD TRAINS data. The lowest average regulatory distance (in bold) within the Asia-Pacific subregions is in North and Central Asia, in large part due to the Eurasian Economic Union’s efforts at harmonization. South and South-West Asia are next with the next lowest internal regulatory distance, followed by South-East Asia, thus also reflecting efforts to harmonize regulations among neighbouring trade partners – notably, without the Philippines, the average regulatory distance in South-East Asia is 0.7.

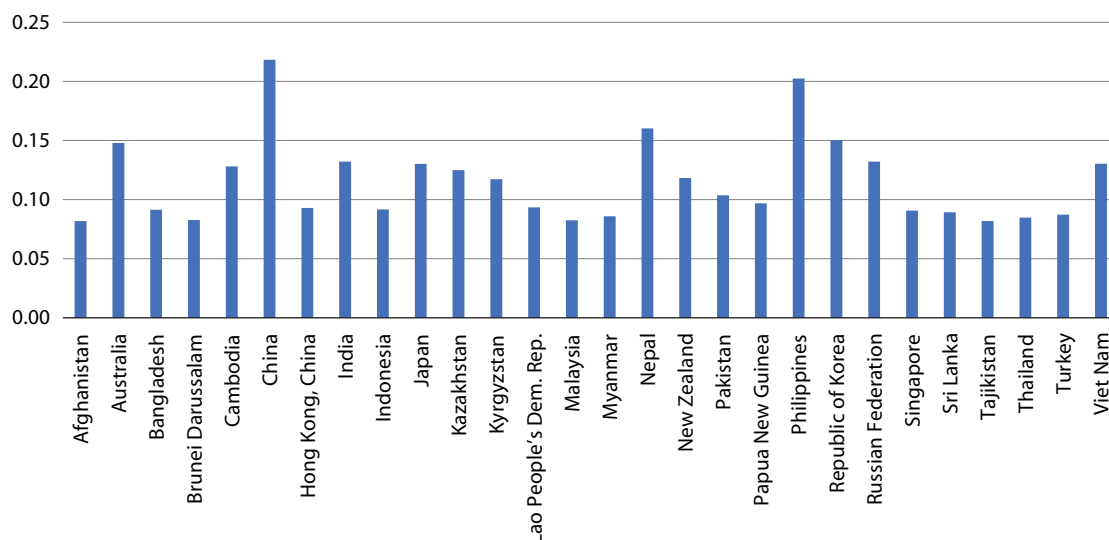
China’s average regulatory distance pushes up the average in East and North-East Asia subregion, not only among subregion’s economies, but also with other subregions and beyond. In terms of regulatory distance with the Asia-Pacific’s major trading partners the results suggest that regulatory distance of Asia-Pacific subregions is significantly lower with the European Union than with the United States. In fact, Asia-Pacific subregions appear to be more harmonized with the European Union than with each

<sup>6</sup> Harmonizing NTM regulations in bilateral cases is, however, rather a “whack-a-mole” game, potentially resulting in increased regulatory distance with other trade partners. As such, it is important that harmonization is conducted plurilaterally or, ideally, multilaterally on the basis of international standards (see chapter 3).



**Figure 2.6**

**Average regulatory distance of Asia-Pacific economies with regional trade partners**



Source: ESCAP calculations, based on the UNCTAD TRAINS database.



**Table 2.1**

**Average regulatory distance scores within and among Asia-Pacific subregions, the European Union and the United States**

|                           | East and North-East Asia | North and Central Asia | Pacific | South-East Asia | South and South-West Asia | European Union | United States |
|---------------------------|--------------------------|------------------------|---------|-----------------|---------------------------|----------------|---------------|
| East and North-East Asia  | 0.17                     | 0.14                   | 0.15    | 0.14            | 0.15                      | 0.14           | 0.20          |
| North and Central Asia    | 0.14                     | 0.08                   | 0.12    | 0.11            | 0.11                      | 0.10           | 0.18          |
| Pacific                   | 0.15                     | 0.12                   | 0.12    | 0.11            | 0.12                      | 0.12           | 0.19          |
| South-East Asia           | 0.14                     | 0.11                   | 0.11    | 0.10            | 0.10                      | 0.10           | 0.18          |
| South and South-West Asia | 0.15                     | 0.11                   | 0.12    | 0.10            | 0.09                      | 0.10           | 0.18          |
| European Union            | 0.14                     | 0.10                   | 0.12    | 0.10            | 0.10                      | –              | 0.16          |
| United States             | 0.20                     | 0.18                   | 0.19    | 0.18            | 0.18                      | 0.16           | –             |

Source: ESCAP calculations, based on the UNCTAD TRAINS database.

other. This confirms a study by Stoler (2011), who noted that regional trade agreements (RTAs) involving the European Union often required partner countries to harmonize their SPS and TBT regulations with those of the European Union (see box 2.4).

Knebel and Peters (2019) assessed the regulatory distance among the Association of Southeast Asian Nations (ASEAN) countries and differentiated

agriculture and manufacturing. They found that the regulatory distance of ASEAN countries was much lower in the manufacturing sectors. A lower regulatory distance in the manufacturing sector may indicate that higher regulatory convergence has contributed towards the advanced industrial integration and value chains within ASEAN. The ASEAN members with the lowest shares of intraregional trade (Cambodia, the Philippines, Viet Nam and Indonesia),



### SPS regulation as a promoter of exports in Georgia

In 2014, the Governments of Georgia and the European Union signed the Association Agreement (AA), paving the way to establish a Deep and Comprehensive Free Trade Area (DCFTA). The Agreement entered into force on 1 July 2016 (Emerson and Kovziridze, 2016). The purpose of the Agreement, in part, is to increase Georgia's trade with the European Union and other major trading partners across the world, by reforming economic regulations. In particular, part of the Agreement envisaged the adoption by Georgia of SPS legislation in line with that of the European Union. According to the European Commission (2018), the benefits of adopting stricter standards for Georgia are:

1. Higher quality of Georgian food products;
2. More protection of consumer health and public health in general, as higher quality products reduce the spread of diseases;
3. Georgia's food products will meet international standards and will face simplified legislation when trading with the European Union and other markets;
4. Having higher quality products builds the credibility of Georgian exports in the international market.

Prior to DCFTA, Georgia's SPS regulation was devoid of most forms of SPS control (Emerson and Kovziridze, 2016). This was largely due to previous rounds of Georgia's unilateral liberalization efforts and its fight against corruption. However, in the process of meeting the conditions for DCFTA, in 2010 Georgia started to harmonize its SPS regulations with those of the European Union. This "approximation process" involved ongoing adoption of 271 separate Acts of legislation, of which 102 concerned food safety, 84 were veterinary and 85 were phytosanitary. While SPS regulation was only a part of DCFTA, it was arguably the most difficult to address, both for regulators as well as for producers. The reforms were costly, with exports to the world and the European Union declining by 4% and 11%, respectively, immediately before the new legislation was put in place.<sup>a</sup> However, uninhibited access to the agricultural market of the European Union and beyond, together with increased protection of food safety and animal welfare, have evidently been worth the trouble: between 2016 and 2018, Georgia's total exports have increased by 28% and 59% to the European Union and the world, respectively.

<sup>a</sup> ESCAP calculations, based on trade data from the United Nations Comtrade database (accessed May 2019).

by contrast, exhibit a relatively large regulatory divergence from the rest of the ASEAN group. In agriculture, Knebel and Peters (2019) found that the four ASEAN countries that are net exporters of agricultural goods (Thailand, Indonesia, Malaysia and Viet Nam) converge towards the more highly-regulated developed countries, the United States, the European Union and Japan. However, there are no signs of regulatory similarity in agriculture between those four ASEAN member States.

*“Regulatory distance between Asia-Pacific economies and major trade partners of the European Union and the United States is higher for NTMs addressing SDGs.”*

As discussed in chapter 3, regulatory harmonization is an effective method of bringing down the costs associated with NTMs while ensuring that they achieve the public policy objectives. As such, a priority among policymakers should be to harmonize NTM regulations that address these objectives, most of which are embedded in the SDG framework. Following the identification of measures related to SDGs presented in chapter 1, regulatory distances were calculated only for measures that were evaluated as having a direct and positive impact on SDGs (table 2.2). The average regulatory distance of 0.12 within and between Asia-Pacific subregions is slightly higher than for all measures (0.11). Most notable, however, is significantly higher regulatory



**Average regulatory distance scores within and among Asia-Pacific subregions, the European Union and the United States, for measures directly addressing SDGs only**

|                           | East and North-East Asia | North and Central Asia | Pacific | South-East Asia | South and South-West Asia | European Union | United States |
|---------------------------|--------------------------|------------------------|---------|-----------------|---------------------------|----------------|---------------|
| East and North-East Asia  | 0.20                     | 0.16                   | 0.17    | 0.16            | 0.15                      | 0.17           | 0.27          |
| North and Central Asia    | 0.16                     | 0.09                   | 0.14    | 0.12            | 0.11                      | 0.12           | 0.24          |
| Pacific                   | 0.17                     | 0.14                   | 0.15    | 0.13            | 0.11                      | 0.14           | 0.25          |
| South-East Asia           | 0.16                     | 0.12                   | 0.13    | 0.10            | 0.08                      | 0.12           | 0.24          |
| South and South-West Asia | 0.15                     | 0.11                   | 0.11    | 0.08            | 0.05                      | 0.09           | 0.23          |
| European Union            | 0.17                     | 0.12                   | 0.14    | 0.12            | 0.09                      | –              | 0.23          |
| United States             | 0.27                     | 0.24                   | 0.25    | 0.24            | 0.23                      | 0.23           | –             |

Source: ESCAP calculations, based on UNCTAD TRAINS database and methodology developed by ESCAP and UNCTAD (Kravchenko and others, 2019).

dissonances with the European Union and the United States (compare the European Union and the United States columns in tables 2.1 and 2.2). This suggests that NTM regulations that support sustainable development in the region are not harmonized with those of major trade partners outside the Asia-Pacific region.

## B. NON-TARIFF MEASURES AND FOREIGN DIRECT INVESTMENT

While considerable attention in the literature has been paid to understanding the relationship between NTMs and trade, less has been dedicated to investigating the relationship between NTMs and FDI. By definition, NTMs affect trade first, and consequentially economists have concentrated on studying their impact on trade. Nonetheless, as trade and investment are intrinsically linked to each other, either as complements or substitutes, it stands to reason that NTMs can also either directly or indirectly influence the decision of firms to invest abroad; this should also be reflected in aggregate FDI patterns (box 2.5).

*“The effect of technical measures in inducing FDI ranges from 14% to 21%.”*

Conventional FDI theory presupposes that a firm will pursue FDI instead of exporting when faced with

market imperfections. NTMs, when significantly affecting trade, can be thought of as a type of market imperfection. The type and trade cost of an NTM as well as the strategic choice constraints facing a firm will determine that firm’s response to the NTM. A firm may choose to circumvent an NTM through FDI when the cost of doing so is lower than the cost implications for exporting. Furthermore, to the extent that tariffs may trigger tariff-jumping, NTMs may also induce inward FDI to the country imposing NTM because they increase market access barriers. Indeed, Nicoletti, Golub and Hajkova (2003) confirmed such a positive relationship between NTMs and FDI. Yet, there has been no follow-up research to confirm this relationship. For policymakers to fully assess and understand the implications of NTMs, they must also begin to focus attention on how NTMs affect FDI.

Different NTMs will have different cost implications for firms. Consequently, certain NTMs may be more likely to motivate a firm to pursue FDI instead of trade. Government procurement restrictions and local content requirements (LCR)<sup>7</sup> may sway a firm towards FDI, especially as they could exclude foreign firms from trade because of their domicile. In such instances, firms are faced with the choice between market entry through FDI or market exclusion, and therefore the cost of these types of NTMs for the firm is the eschewed profit from not operating in the market.

<sup>7</sup> The focus is on LCR put in place in host countries on (imported) goods.


**Box  
2.5**
**Estimating the effect of NTMs on FDI**

To evaluate the effects of NTMs on FDI, similar to the analysis described in box 2.2, ESCAP has conducted an econometric analysis linking NTMs to FDI flows. The results first confirm strong complementary linkages between trade and FDI – imports have a strong and positive link with inward FDI, whereas the reverse relationship (i.e., the effect of FDI on imports) is weaker. As such, through their effects on imports, NTMs may indirectly affect inward FDI. Overall, the analysis suggests that an incremental increase in the average number of NTMs imposed could boost FDI by approximately 12%. When disaggregated, the effect of technical measures in inducing FDI ranges from 14% to 21%. An important policy implication of these findings is that NTMs, while generally examined through prism of merchandise trade alone, also have a strong effect on FDI; thus any sustainability impact assessment of NTMs needs to consider their effects on FDI as well.

Source: Utoktham (forthcoming).

Both technical standards and intellectual property rights (IPRs) increase the costs for firms, regardless of whether firms choose to export or pursue FDI. Differences in technical standards may force firms to produce different models of their products to meet multiple market requirements, consequently increasing expenditure and reducing economies of scale for batch production. In certain sectors, firms may pursue FDI to circumvent NTM if it is easier and cheaper to comply with the technical standards when producing locally.

Intellectual property rights protection may constitute an important NTM (chapter N in ICNTM classification of NTMs). Different IPR regimes may increase the cost of research and development (R&D) and lead to higher administrative and legal costs. While strongly enforced IPR regimes may also serve to encourage inward FDI and exporting, the opposite would be true when IPRs are weakly enforced, because the risk of patent or copyright infringements is higher.<sup>8</sup> This is particularly relevant for developing countries, where implementation of stronger IPR regimes may not only serve to incentivize imports and inward FDI, but also help their indigenous firms learn how to comply with IPRs and thereby enable them to better pursue outward FDI in countries with stronger IPR regimes.

These are just several illustrations of potential ways in which NTMs may be linked to the investment decisions of firms and thereby affect aggregate FDI

patterns. To test these assumptions, ESCAP conducted several qualitative case studies that can be extended and replicated in future research to further confirm the impacts of NTMs on FDI patterns. Three types of NTMs were selected as the focus of these case studies – IPRs, LCR and technical barriers to trade in India, Indonesia and China, respectively. The NTMs were implemented in specific sectors in each country, and the case studies examined their impacts on inward FDI. These case studies were chosen based on the availability of data and availability of information on the NTM itself. In each case study, aggregate figures were used to illustrate the link between the NTM and FDI. The case studies do not contain econometric findings but rather focus on providing context and making use of descriptive metrics to understand and draw conclusions on the relationship under study. The results of these case studies are given below.

### 1. Case study 1: FDI and IPRs in the Indian pharmaceutical sector

*“Striking the right balance between a stricter IPR regime and affordability and availability of life saving medicines is essential.”*

The case study on IPRs in the Indian pharmaceutical sector analysed aggregate FDI patterns both before and after implementation of stronger IPRs, in line with

<sup>8</sup> These risks may also extend to trademarks and geographical indications which, although not protected under IPRs, are still important means of protecting traditional knowledge.

India's commitment as a WTO developing country member State to become fully compliant with the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) by 2005. Between 1995 and 2005, India simultaneously slowly phased in stronger TRIPS compatible IPRs in the pharmaceutical sector, which were extremely significant for encouraging growth in inward FDI.<sup>9</sup>

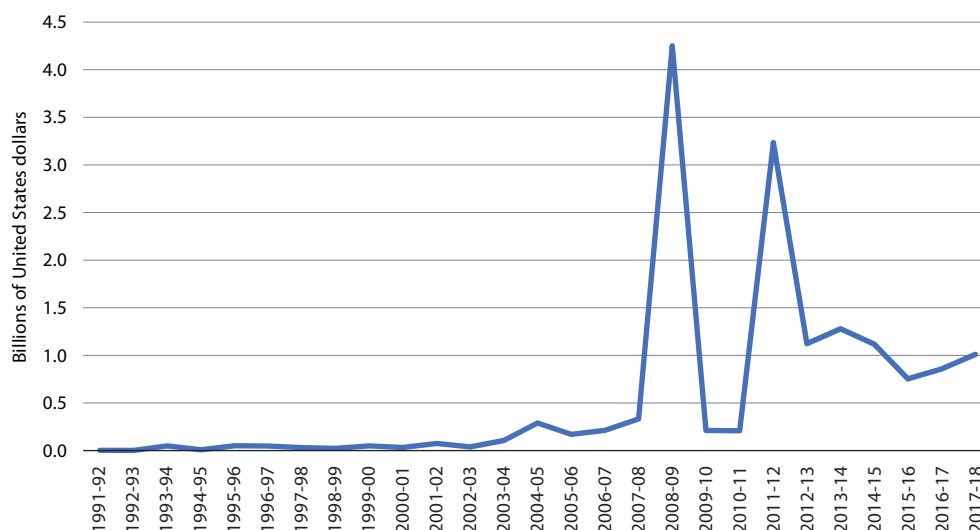
During 1991-1995, FDI inflows in the pharmaceutical sector averaged a moderate \$17 million, and totalled \$68.7 million. In comparison, during the TRIPS transition period (1995-2005), inward FDI averaged roughly \$73 million annually, with the largest year-on-year increases occurring in the years closest to full implementation of TRIPS in 2005. During the 1995-2005 transition period, the largest jumps in inward FDI came in 2003-2004 in anticipation of TRIPS, and then again in 2004-2005 once implementation had begun. Furthermore, inward FDI into pharmaceuticals as a percentage of total FDI inflows has also increased since TRIPS implementation began (figure 2.7). This is illustrated by the fact that between 1991 and 2003 pharmaceutical inward FDI in India

averaged about 2% of total FDI inflows; however, since then it has doubled and averaged about 5% of total FDI inflows annually.

As illustrated by figure 2.7, inward FDI increased after the full implementation of stronger patent protection in 2005 and remained much higher than previous levels in the years that followed the implementation. However, despite higher overall levels of FDI flows, significant volatilities have remained apparent following IPR implementation. The most volatile years for FDI have also been years in which there were a series of intellectual property rulings in India against foreign pharmaceutical firms, related to TRIPS Agreement violations. These cases corresponded with dramatic declines in inward FDI. However, inward FDI quickly recovered after each decline, largely due to the large market potential. Thus, while the introduction of a legal framework for IPR facilitated greater FDI flows in the pharmaceutical sector, the lack of stable and consistent enforcement mechanisms hindered further growth in FDI. Enforcement challenges in the Indian pharmaceutical IPR context are largely driven by the priority India has

**Figure  
2.7**

**Inward FDI to the Indian pharmaceutical sector, 1991-2018**



Source: ESCAP calculations based on the Department of Industry Policy and Promotion, FDI Statistics (various years).

Note: Data based on total equity flows, minus reinvested earnings and portfolio investments.

<sup>9</sup> During this period, India also enacted several liberalizing economic reforms that also opened the sector up to inward FDI. These reforms were also considered in detail in the full case study analysis.

consistently placed on ensuring the availability and affordability of life-saving drugs. This priority drove the development of the intellectual property framework and has come to the forefront again through the multiple IPR-related court cases in India since TRIPS, concerning issues related to patent linkages, evergreening and compulsory licensing.

Maximizing the potential gains from FDI that can come through strengthened IPRs requires more efforts to strike a delicate balance between (a) moving towards a stricter IPR regime with consistent enforcement mechanisms and (b) enabling the affordability and availability of life saving medicines for its population. Striking such a balance will be essential to attracting consistent and increased inward FDI flows while also leading to increased outward FDI.

## 2. Case study 2: FDI and local content requirement in Indonesian smartphone market

*“There is extensive and growing evidence on the harmful impacts of local content requirements on trade and investment.”*

In the second case study, ESCAP analysed the impact of implementation of LCRs (falling under chapter I of ICNTM classification) on 4G smartphones in Indonesia in 2015. In its original form in 2015, LCR required firms to set up manufacturing facilities and to conduct 20% research and development in Indonesia. Later iterations of LCR in 2016, however, introduced different schemes in which both domestic and foreign firms could meet the 4G smartphone LCR, each of which is summarized in table 2.3.



**Tracks to meet 4G smartphone LCRs in Indonesia**

| No. | Scheme     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Hardware   | <ul style="list-style-type: none"> <li>Manufacturing of 70%, consisting of 95% material, 2% labour, 3% production machinery;</li> <li>20% R&amp;D consisting of 10% licence, 40% firmware, 20% industrial design, 30% integrated circuit layout design;</li> <li>Applications of 10%, with a minimum of two embedded local applications or four embedded local games that are actively being used by 250,000 users, with the software injection process being done in the country, the use of a domestic server, and own local online applications store.</li> </ul>                                                                                 |
| 2   | Software   | <ul style="list-style-type: none"> <li>Manufacturing of 10%, consisting of 95% material, 2% labour and 3% production machinery;</li> <li>20% R&amp;D consisting of 10% licence, 40% firmware, 20% industrial design, 30% integrated circuit layout design;</li> <li>Applications of 70%, with a minimum of seven preload local applications or 14 preload local games that are actively being utilized by 1 million users, with the software injection process being done in the country, the use of a domestic server, own local online application store, and a cost, insurance, and freight (CIF) price of a minimum of 6 million IDR.</li> </ul> |
| 3   | Investment | <ul style="list-style-type: none"> <li>Investment of 400 billion to 550 billion IDR, equal to 25% local content;</li> <li>Investment of 550 billion to 700 billion IDR, equal to 30% local content;</li> <li>Investment of 700 billion IDR to 1 trillion IDR, equal to 35% local content;</li> <li>Investment of more than 1 trillion IDR, equal to 40% local content;</li> <li>This applies to investment only and the investment must be completed within three years. Vendors must realize 40% of investment during the first year and provide details of its annual investment.</li> </ul>                                                       |

Source: Global Business Guide Indonesia (2017).

A big challenge that is preventing causal conclusions on the LCR impact on inward FDI is the lack of reliable sector FDI data on 4G smartphones in Indonesia. However, through analysing greenfield investment data, the case study was able to illustrate that the immediate response of firms to LCR was to increase their investments in the local market. LCR most likely did not deter firms because of the market potential – the Indonesian smartphone market is one of the few markets left in the world that have not fully matured. On the contrary, it has been forecast to boom between 2015 and 2022 (BMI Research, various years; Fitch Solutions, 2018).

Nonetheless, the increase in inward greenfield FDI was only temporary. Although inward FDI expanded in 2015 when LCR was announced, since then it has dramatically declined. Firms with the largest market share are now already capable of meeting the LCR requirements and are able to cater to the local market. The principal recommendation coming from this case study is that a performance evaluation of LCR in its current form is urgently needed, as it only resulted in a one-time spike in inward FDI and has since discouraged FDI. Such a performance evaluation should focus on determining if and how LCR could be redesigned or removed to better achieve its stated aims as well as support indigenous industry growth and value chain integration of indigenous firms in the smartphone sector.

A word of caution at this point – there is extensive and growing evidence of the harmful impacts of LCRs on trade and investment.<sup>10</sup> This case study does not veer far from this evidence. Although the immediate impact of LCR was positive for inward FDI, it was short-lived and context-specific. It was short-lived because it was a one-time immediate increase, whereas over the medium-term, LCR has resulted in a dramatic reduction of FDI to levels to almost below that before LCR. It was context-specific because it was only able to persuade firms to continue to invest, given the smartphone market potential in Indonesia during 2015–2022. While LCR may have the potential to contribute to short-term gains in FDI, they are more likely to be FDI-reducing in the long term.<sup>11</sup> In the instances when they are applied for short-term gains, it is critical that they are

properly designed and implemented as well as continuously monitored and evaluated to determine whether they are indeed achieving their intended purpose or if they need to be redesigned or removed.

### 3. Case study 3: FDI and TBTs in Chinese pharmaceutical and medical device markets

*“A potentially positive effect of NTMs on FDI may be offset by their negative effect on trade; hence, these impacts cannot be seen in isolation.”*

The final case study analysed the extent to which removal of sector-specific TBTs in the pharmaceutical drug and medical device sector has encouraged inward FDI in China by removing barriers to entry. In particular, the case study examined two key reforms enacted in 2015 – the introduction of eased registration requirements in the pharmaceutical drug subsector, and the removal of duplicate local clinical trial testing requirements in the medical device subsector. These reforms were aimed in particular at gradually relaxing the market entry and operating barriers for foreign firms and imported pharmaceutical products, and therefore should have led to increases in import-associated inward FDI.

As figure 2.8 illustrates, while FDI had been growing steadily prior to regulatory reform in 2015, there were considerable fluctuations. However, inward FDI in both subsectors of the industry have skyrocketed since the implementation of reforms of both the registration and clinical trial requirements. Between 2014 and 2017, inward FDI jumped from \$956 million to \$2.1 billion. The largest year-on-year increase in FDI between 1997–2017 occurred during 2015–2016, when inward FDI increased by 52%. Indeed, the large jump in FDI corresponds to the year in which reforms were loosened both on pharmaceutical drugs and on devices, suggesting a positive correlation between the removal of the complex requirements and inward FDI.

The reforms have had a positive impact on FDI by removing some of the upfront risks as well as the investment<sup>12</sup> that is required to enter the Chinese market. Nonetheless, meeting the medical needs

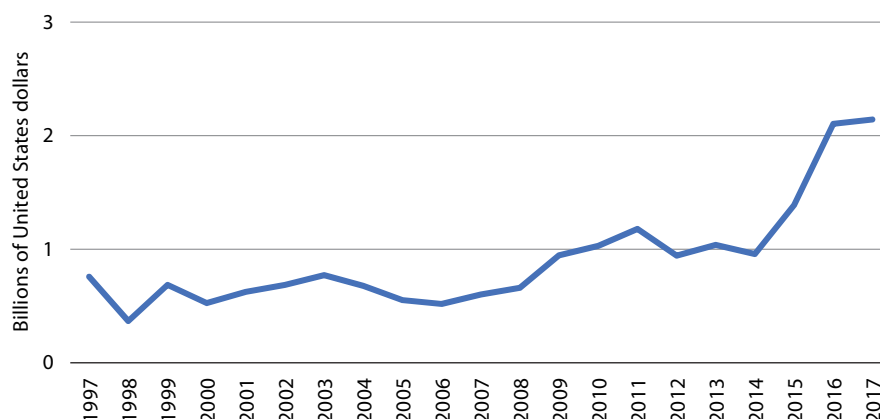
<sup>10</sup> For example, see Evenett and Fritz (2016), Hufbauer and Schott (2013), and Stone, Messant and Flaig (2015).

<sup>11</sup> Unless domestic suppliers can provide high-quality inputs, in which case a mandatory LCR would no longer be necessary.

<sup>12</sup> In this instance, the up-front risk and investment referred to here are associated with the cost of registration requirements and often-duplicated local clinical trials that were previously required.



**Inward FDI flows to China in pharmaceutical products (drugs and devices), 1997-2017**



Source: ESCAP calculations, based on CEIC data.

of China's growing and ageing population, while also building an innovative and competitive pharmaceutical sector, critically depends on developing a well-crafted long-term strategy for the industry that allows pharmaceutical products produced both at home and abroad to flourish, but which also supports R&D activities at home. Removal of further TBTs that continue to hamper investment, and a loosening of the strict drug and device price controls in the sector, must be made critical components of such a strategy.

These case studies illustrate the impact that NTMs can have on FDI. However, they are limited – one case study on one type of NTM in one country cannot broadly confirm a causal link between one specific NTM and its impact on FDI. Extension and verification are needed. The main takeaway from these case studies for policymakers is that NTMs do indeed have an impact on FDI. Putting the limitations of the conclusions of these case studies aside, the clearly demonstrated links between NTMs and FDI patterns point to the need for NTMs to be carefully designed and monitored. Furthermore, because some NTMs may have the capacity to encourage FDI levels, this could prove increasingly relevant to policymakers aiming to generate investment in key SDG sectors.

As countries are currently involved in establishing policies for implementing SDGs, the ability to design targeted NTMs to build a base of quality FDI in key

SDG sectors is particularly relevant. It is also important to understand how NTMs may prevent or hamper FDI in key SDG sectors, such as TBT measures in the health sector. A potentially positive effect of NTMs on FDI may be offset by the negative effect on trade; hence, these impacts cannot be considered in isolation. Furthermore, the effects of any NTM on FDI will certainly be tied to the political and economic context in which they are implemented; therefore, they need to be carefully designed and based on an effective assessment of country and sector needs.

### C. NON-TARIFF MEASURES: A PRIVATE SECTOR PERSPECTIVE

The previous sections examined the effects of NTMs on trade, trade costs and FDI. The analysis was largely based on high-level trade and FDI data. Such analysis, however, is susceptible to missing important micro-level nuances from the point of view of companies that engage in international trade. As such, ESCAP in collaboration with ITC, have synthesised country-level ITC studies on NTMs in the Asia-Pacific region (ESCAP and ITC, 2019). This section briefly discusses the key results of the study (see box 2.6 for a summary of the findings). Conclusions are drawn from two types of ITC data – direct NTM data from ITC business surveys conducted in nine Asia-Pacific economies, and mirror statistics derived from this NTM data covering 44



### A snapshot of NTM survey findings

NTM survey findings at a glance:

- NTMs have a significant impact on exporters in the Asia-Pacific region, with 56% of all interviewed firms reporting burdensome NTMs;
- Intraregionally applied NTMs comprise exactly half of all reported NTMs, broadly reflecting the weighting of intraregional trade versus total trade, which comprises almost three fifths of Asia-Pacific exports (57%) and imports (59%);
- Businesses perceive that burdensome NTMs are typically applied by export partners (80%) rather than domestic governments (20%);
- Almost 90% of all export partner NTMs come from only three types of import-related NTMs: technical barriers to trade, sanitary and phytosanitary measures and rules of origin;
- More than 40% of all domestic government NTMs come from only three types of export-related NTMs: export certification, inspection and licensing.

Domestic procedural obstacles are the primary reason why NTMs are found to be burdensome, with more than 80% of export partner NTMs and more than 90% of domestic government NTMs found to be problematic as a result.

ESCAP members. This analysis thus includes both country-level and regional data on NTMs in the Asia-Pacific region, identifying commonalities and differences across subregions and highlighting areas for action and cooperation. However, only nine Asia-Pacific economies have thus far been surveyed and the results of this report should be interpreted with this caveat in mind.

*“Domestic procedural obstacles are the primary reason why NTMs are found to be burdensome, with more than 80% of export partner NTMs and more than 90% of domestic NTMs found to be problematic as a result.”*

## 1. Burdensome NTMs in Asia and the Pacific

*“The majority of all interviewed companies in the Asia-Pacific region reported facing burdensome NTMs, applied by either export partners or domestically by their own home country.”*

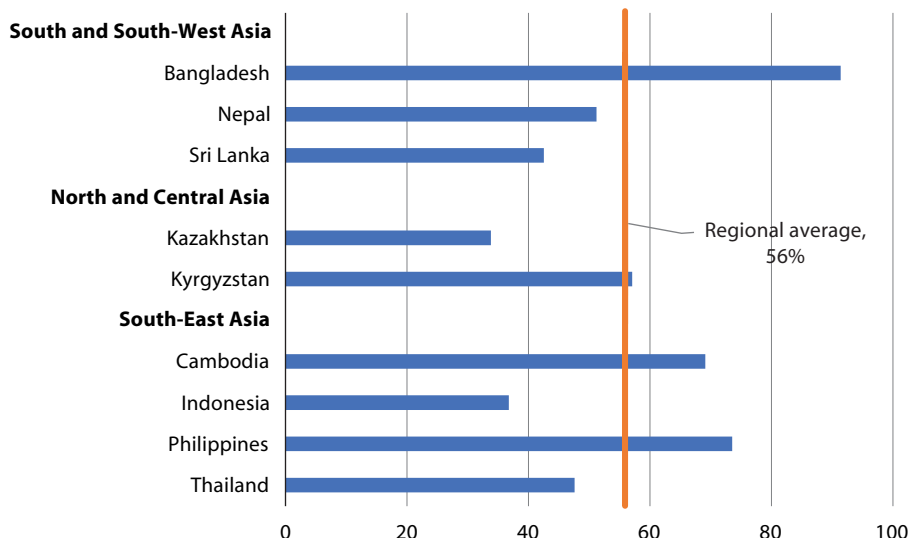
In surveyed Asia-Pacific economies, an average of 56% of all interviewed companies (comprising both exporters and importers) reported facing burdensome NTMs, applied either by export partners or domestically

by their own home country. The 56% average ratio of firms encountering “burdensome” NTMs is higher than the 44% regional average reported by the Arab States, but lower than in African regions such as West Africa (73%) and East Africa (64%). However, when comparing this figure both across countries and regions, it is important to consider national differences in survey implementation, as responses (and response rates) may be affected by socio-economic factors, cultural biases, business environments and the quality of stakeholder relationships between the entities that collaborate to supply data for the survey.

These differences are illustrated in figure 2.9 that shows, for example, that many more (91%) Bangladesh companies report facing burdensome NTMs than all other economies in Asia and the Pacific. This could be due to the particularly undiversified nature of the Bangladesh economy, which primarily exports garments and textiles, and where ITC survey results show that a quarter of all burdensome NTMs are attributed to very stringent rules of origin requirements (ITC, 2017a). Other Asia-Pacific economies that have higher affectedness rates than the regional average include Kyrgyzstan (57%), Cambodia (69%) and the Philippines (74%). Kyrgyzstan only joined the Eurasian Economic Union



**Share of surveyed companies in nine Asia-Pacific economies that reported encountering burdensome NTMs**



Source: ESCAP and ITC (2019).

in 2015, which may imply that many of the reported NTMs in the country come from adjustment issues to a common regulatory environment (ITC, 2018). While at the outset Filipino exporters generally feel that all barriers are de facto non-negotiable, when prompted on costs, paperwork requirements and time frames, the exporters concede that some regulations are, in fact, burdensome (ITC, 2017b). These and other factors (such as trade facilitation implementation (box 2.7) may have an impact on the difference in survey results across countries in the Asia-Pacific region.

*“Traders encounter fewer ‘burdensome’ NTMs when doing trade with economies that have higher levels of trade facilitation implementation.”*

Exactly half of all recorded burdensome NTMs originate intraregionally, which is to be expected given that more than half of all trade flows occur between partners within the region (see *Asia-Pacific Trade and Investment Report 2018* for intraregional trade figures (ESCAP, 2018)). However, the relationship between the shares of trade and the rate of encountering burdensome NTMs does not hold when disaggregated subregionally. To assess the difficulty of accessing an export market, figure 2.10

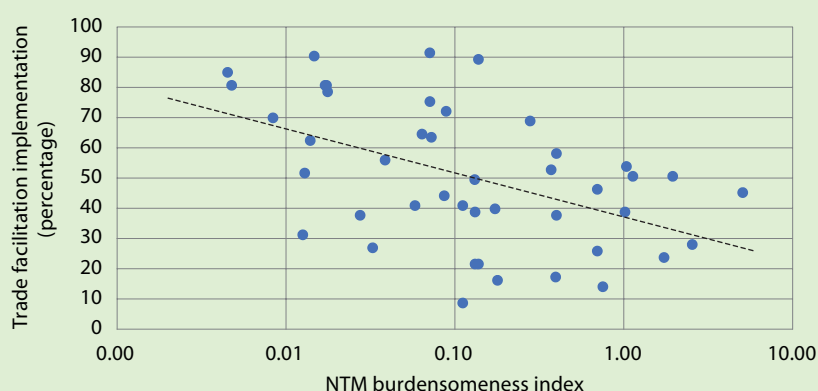
compares the share of burdensome NTM cases reported by traders in nine Asia-Pacific economies examined in this study and the share of their combined exports to each subregion and other major export markets.

For each destination market, if the share of burdensome NTMs is higher than its share of regional exports, it can be concluded that that market is relatively difficult for exporters to access. For example, South-East Asia, East and North-East Asia (both major intraregional export destination markets) and the United States appear to be relatively easier to access than the European Union – which accounts for a much larger share of burdensome NTMs in the region – while its share of Asia-Pacific exports is only two percentage points higher than that of the United States. NTMs in North and Central Asia seem to be particularly problematic, as the subregion accounts for as many burdensome NTMs cases as the European Union, although it has a very small share of regional exports. Last, while it is not (formally) as big a market as other intraregional export destinations, South and South-West Asia features a high percentage of burdensome NTMs compared with its export shares; however, although this may be due to the incidence of informal and illegal border trade, which is especially high between Bangladesh and India (ITC, 2017a).

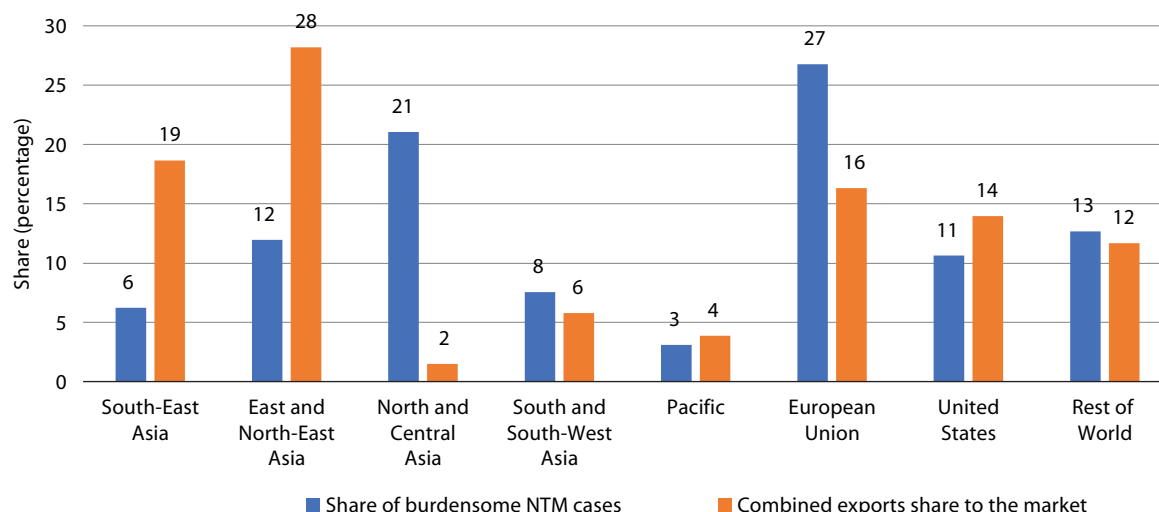
**Box  
2.7**
**Burdensome NTMs and trade facilitation**

Figure shows the trade facilitation implementation rates and incidence of NTM “burdensomeness” among the 44 ESCAP member economies, with NTM “burdensomeness” calculated as the ratio between NTM incidence (by implementing economies) and export trade values in these economies in 2015. Indeed, it indicates that the level of burdensome NTM incidence is inversely related to an increase in trade facilitation implementation levels, reinforcing the sentiment that greater trade facilitation implementation does indeed make it easier for countries to trade (i.e., traders encounter fewer burdensome NTMs when doing trade with economies that have higher levels of trade facilitation implementation). A detailed discussion on the rates of implementation of trade facilitation is presented in chapter 4.

**Figure. Trade facilitation implementation and NTM “burdensomeness” of 44 Asia-Pacific economies**



Sources: Global Report of the United Nations Global Survey on Trade Facilitation and Paperless Trade Implementation, conducted by the United Nations regional commissions in 2017 (available at <https://unnext.unescap.org/AP-TFSurvey2017/>); and ESCAP and ITC (2019).

**Figure  
2.10**
**Burdensome NTM cases versus combined export shares of the nine economies covered in this study**


Source: International Trade Centre, NTM surveys, 2010-2016.

Note: Australia and New Zealand are included in the Pacific subregion.

However, it should also be noted that NTMs are highly heterogeneous and have widely different potential effects on trade and welfare. For example, a labelling requirement might not be as problematic as a quota, although both are given the same weight as NTMs. Thus, allocating the “share of burdensome NTMs cases” as an indicator of market access constraints must also be considered with caution.

## 2. Domestic procedural obstacles form the biggest challenge

*“Procedural obstacles encountered by Asia-Pacific exporters in compliance with NTMs – whether applied by export partners abroad or by home Governments, and not NTMs themselves – are the predominant reason why companies complain about regulatory obstacles to trade.”*

In line with results from other ITC surveys, figure 2.11 shows that procedural obstacles encountered by Asia-Pacific exporters in compliance with NTMs<sup>13</sup> – not NTMs themselves – are the predominant reason why companies complain about regulatory obstacles to trade. This means that for a typical firm, it is much more difficult to get the relevant certification to

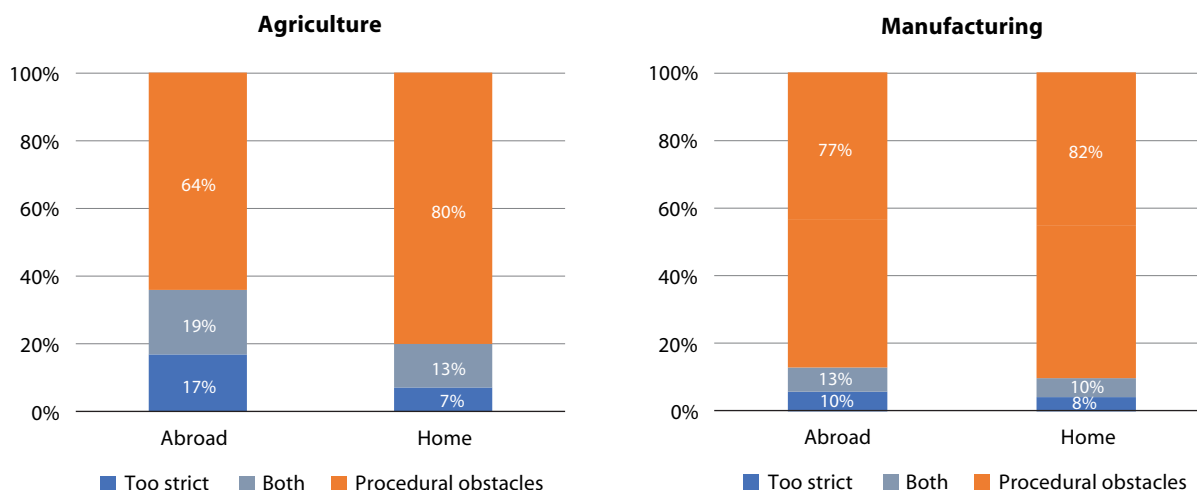
comply with a rule than complying with the rule (NTM) itself. For NTMs applied by export partners abroad, manufacturing procedural obstacles appear to create more difficulties for NTMs than agriculture procedural obstacles. Domestic NTMs applied by home Governments, on the other hand, are found to be about equally problematic in both sectors. In particular, 90% of NTMs applied by export partners in the manufacturing sector are found to be problematic because of procedural obstacles (either exclusively procedural obstacles or as a combination of procedural obstacles and their related NTMs), compared with only 83% of NTMs applied by export partners in agriculture. In contrast, more than 90% (93% in agriculture and 92% in manufacturing) of the difficulties with NTMs applied by home Governments are attributed to procedural obstacles.

*“The most common procedural obstacles in the region are reported to be time delays related to regulation (28% of all cases) and the occurrence of informal payments or unusually high fees and charges for regulation (27.5%).”*

The next graph (figure 2.12) gives an overview of the most common types of procedural obstacles reported by exporters when dealing with burdensome

**Figure 2.11**

**Why exporters find NTMs a burden, either abroad or at home**

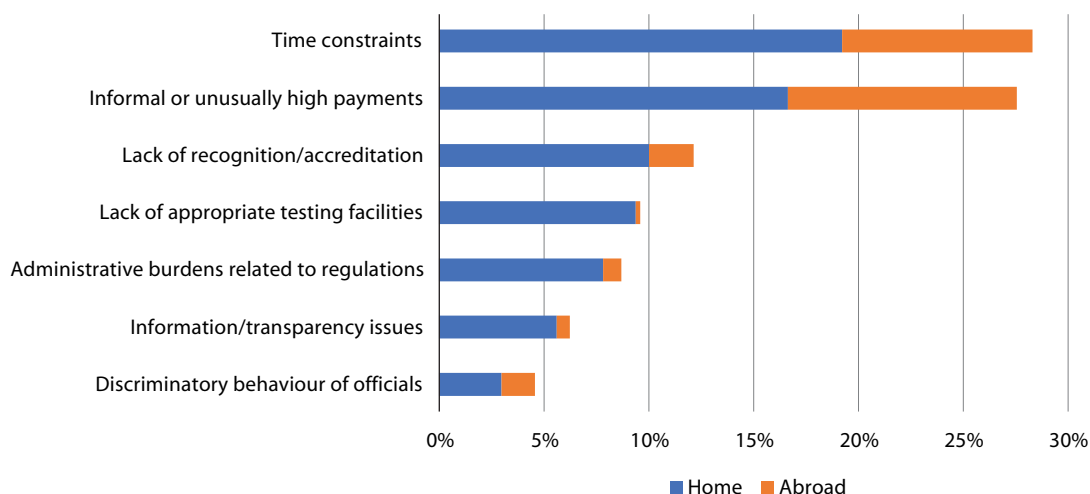


Source: International Trade Centre, NTM surveys, 2010-2016.

<sup>13</sup> Whether applied by export partners abroad or home Governments.



**Types of procedural obstacles encountered by exporters when complying with NTMs of export partners**



Source: International Trade Centre, NTM surveys, 2010-2016.

NTMs applied by export partners, including whether they are encountered at home or abroad. The most common procedural obstacles deal with time delays related to regulation (28% of all procedural obstacles), and the occurrence of informal payments or unusually high fees and charges for regulation (27.5%). A significant portion of procedural obstacles (in blue) that hinder compliance with export partner NTMs are encountered at home. Only a third or less (in orange) are reported to occur in partner countries.

## D. CONCLUSION

While chapter 1 highlighted how NTMs address SDGs, this chapter highlighted the trade costs associated with NTMs, and the effects of NTMs on trade and investment. While technical NTMs serve important public policy objectives, and can even incentivize trade, their global cost is estimated to be as high as \$1.4 trillion. In addition, a private sector perspective was presented that highlighted that in most cases it is not the NTMs themselves, but rather the procedural obstacles related to NTMs in home countries that are the main cause of concern among traders. Trade costs associated with NTMs can be

broken down into information costs, conforming assessment costs and specification costs. Information costs could be reduced through greater transparency, together with regional cooperation and dialogue to improve information exchange. While NTMs are more prevalent in the more developed economies of the European Union and in the United States, their trade costs are higher in the Asia-Pacific region due, in part, to lower levels of trade facilitation implementation, confirming the fact that the impact cannot be simply derived from prevalence. In general, countries that have higher rates of trade facilitation implementation also have fewer instances of traders' complaints of burdensome NTMs in those economies. As such, conformity assessment costs could, in part, be addressed through enhanced trade facilitation and mutual recognition arrangements. This is discussed in greater detail in chapter 4. Specification costs – cost associated with changing products and/or production processes – can be addressed through NTM harmonization, which is shown to be largely lacking in the Asia-Pacific region. One way that harmonization across countries could be achieved is through adherence to international standards; this issue is discussed in further detail in chapter 3.

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# Non-tariff measures and their relationship to international standards

The costs of complying with non-tariff measures (NTMs) in international trade are high (as detailed in chapter 2). A significant share of such costs stems from the fact that technical regulations are often very different between countries. The Transatlantic Trade and Investment Partnership negotiations between the European Union and the United States that were mostly about NTMs have demonstrated how different regulations can be even in countries with similar levels of safety requirements. For example, the United States allows farmers to rinse chicken with chlorine to remove harmful bacteria, whereas this is not permitted in the European Union to ensure higher hygiene standards in earlier production processing steps. With the United Kingdom of Great Britain and Northern Ireland seeking a separate trade agreement with the United States, post-Brexit, the chlorinated chicken issue is also likely to be placed on the table (BBC, 2019).

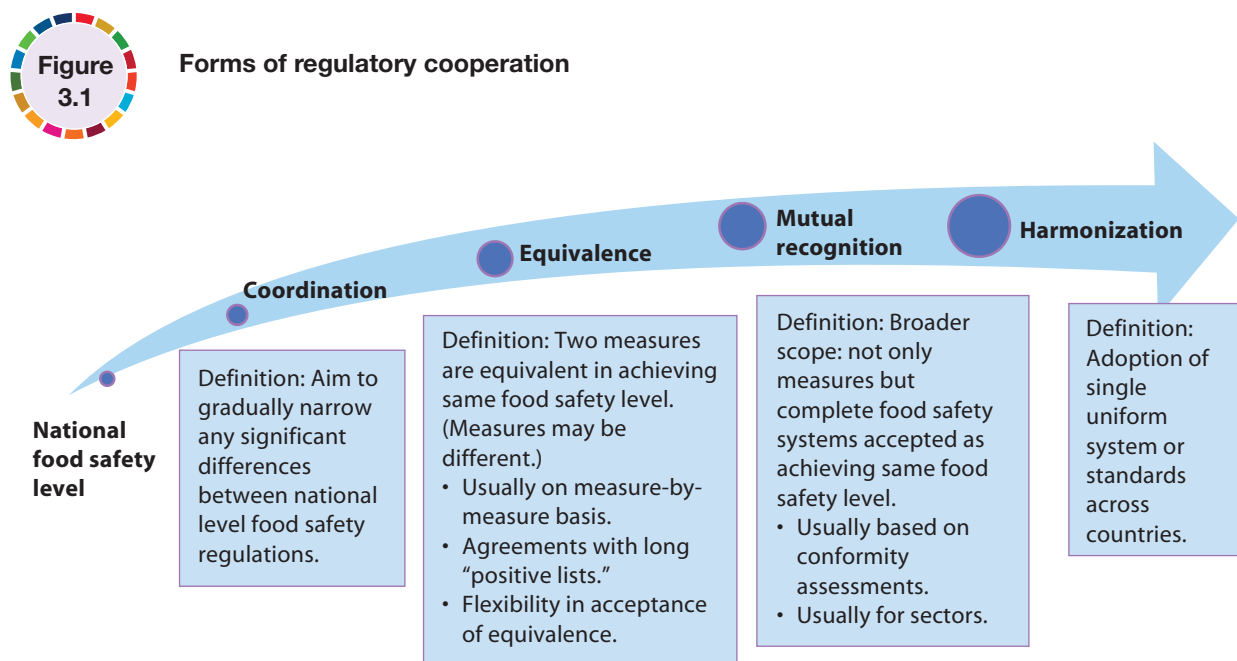


*“To protect health, safety and the environment, NTMs need to be coordinated or harmonized, rather than eliminated.”*

Recognizing the necessity for sanitary and phytosanitary (SPS) measures and technical barriers to trade (TBT) to protect health, safety and the environment entails the need for such NTMs to be coordinated or harmonized, rather than eliminated. Several studies have shown the beneficial effect of regulatory cooperation. For example, Wilson, Otsuki and Majumdsar (2003) examined the impact of residue limits of the antibiotic tetracycline in beef. They found that beef imports are significantly lower in countries that have a more stringent residue limit. They estimate that regulatory convergence towards the international standard set by Codex Alimentarius would increase international trading of beef by \$3.2 billion. Other studies have assessed the aggregate impact of NTMs and regulatory cooperation. Knebel and Peters (2019), for example, showed that a light reform in the Association of Southeast Asian Nations

(ASEAN), where regulations are brought in line with each other without increasing nor decreasing their numbers, could reduce trade costs of NTMs by 25%. In other words, a similar level of protection of health, safety and the environment can be achieved at lower costs if regulations are made more similar or mutually recognized.

Regulatory cooperation can have different forms, ranging from coordination to harmonization (figure 3.1). According to the categorization by Wieck and Rudloff (2019), coordination is the weakest form of cooperation, followed by equivalence, where a partner's measure is seen to achieve an equivalent level of protection; mutual recognition, where a partner's measures are recognized; and harmonization, where countries agree on the same measures.



Source: Wieck and Rudloff (2019).

*"International standards are one way of overcoming challenges related to technical regulations in international trade."*

International standards are one way of overcoming challenges related to technical regulations in international trade caused by differences in regulations and standards developed independently and separately by each country, a national standards

organization or the private sector. The use of international standards is a form of harmonization. For food products, countries may, for example, follow the standards developed by the Codex Alimentarius Commission and make them mandatory national or regional regulations. An advantage of the adoption of such standards is that they are normally developed based on scientific evidence and then used by a wider group of countries. Countries may also use

such standards as a basis and make certain modifications. This can be justified as the concrete situation in terms of geography, climate, culture or risk aversion varies. Any changes, however, reduce the advantageous effect of having a uniform regulation across various countries.

The objective of this chapter is to assess the use of international standards and their similarity to national technical regulations in terms of measure type and stringency. International standards are considered scientifically justified, and are accepted as the benchmarks against which national measures and regulations are evaluated.

*“There is no systematic information available about the use of international standards in national regulations.”*

It appears that there is no systematic information available about the use of international standards in national regulations. Only in some cases are specific references to the corresponding international standard made in national regulations. Sometimes the same or similar language is used with small changes in the text. It is nearly impossible to judge if such changes are significant in terms of the actual requirements that producers have to comply with on a broad scale.

This chapter is structured as follows. Section A introduces international standards in trade while section B prepares the ground for analysing international standards and presents some stylized facts. Section C compares the regulatory structure between national regulations and international standards on a broad level, drawing from a regulatory similarity metric. Section D delves into a more granular assessment of regulatory stringency vis-à-vis international standards for selected countries and products. Section E synthesizes results and provides the conclusion.

## A. INTERNATIONAL STANDARDS IN TRADE

Standardization has a long history and became particularly important during the period of industrialization. In electricity, for example, scientists and engineers from around the world realized

at a world fair in 1904 that standards for electrotechnology were urgently needed because incompatible electricity of numerous different voltages, frequencies and currents were being used (IEC, 2019). This led to what has been referred to as the first international standards organization, the International Electrotechnical Commission (Garche and others, 2009).

The focus here is on such international standards.<sup>1</sup> International standards are technical standards developed by international standardizing bodies (ISBs). The World Standards Cooperation (WSC), established by the International Telecommunication Union (ITU), the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC), aims to strengthen and advance the voluntary consensus-based international standards systems. Furthermore, in the agriculture and food sector, three ISBs stand out: Codex Alimentarius Commission, the World Organisation for Animal Health (OIE)<sup>2</sup> and the International Plant Protection Convention (IPPC).

*“International standards are aimed at protecting consumers health, safety and the environment, and are intended to assist in harmonization of measures, thereby facilitating international trade.”*

International standards are aimed at ensuring safe, reliable and good quality products to protect consumers health, safety and the environment. Measures are supposed to be technically justified. Furthermore, they are also intended to assist in harmonization and facilitation of international trade. For example, the “Codex Alimentarius is intended to act as a guide and to promote the elaboration and establishment of definitions and requirements for foods in order to assist in their harmonization and, in doing so, to facilitate international trade” (FAO, undated).

In the multilateral trading system, international standards also play a critical role. The WTO SPS and TBT Agreements are aimed at striking a balance between the public policy objectives of protecting health, safety and the environment, and the policy goal of trade facilitation. For this purpose, the SPS

<sup>1</sup> For disambiguation for types of standards, see online annex at [www.unescap.org/resources/aptir-2019-online-annex-ntms-and-standards](http://www.unescap.org/resources/aptir-2019-online-annex-ntms-and-standards).

<sup>2</sup> The International Office of Epizootics (OIE) became the World Organisation for Animal Health in 2003.

and TBT Agreements both recognize the importance of international standards in facilitating the conduct of international trade and encourage their use. According to the SPS Agreement, unless there is a scientific justification for more stringent SPS protection, members will base their SPS measures on international standards for achieving broad harmonization and lower trade costs.

Similar to the SPS Agreement, the TBT Agreement (WTO, 1995a) also places an obligation on members to use international standards, wherever they exist, as a basis for their technical regulations and standards, unless the existing international standards or their parts are ineffective or inappropriate for fulfilling the respective legitimate objectives.<sup>3</sup> If technical regulations pursue legitimate objectives and are consistent with relevant international standards, they are presumed to not be creating unnecessary obstacles to international trade.

*“The TBT Agreement does not define to what ‘international standards’ precisely refers. The SPS Agreement, on the other hand, explicitly mentions Codex Alimentarius, OIE and IPPC.”*

Despite the fact that the term “international standard” has been mentioned numerous times in the TBT Agreement, the Agreement does not define the names of ISBs whose documents would be considered as international standards.

Unlike the TBT Agreement in this regard, the SPS Agreement provides a clear answer by explicitly mentioning the “three sisters” ISBs, i.e., Codex Alimentarius for food safety, OIE for animal health and IPPC for plant health (WTO, 1995b).

The Codex Alimentarius Commission has 188 member countries, while IPPC has 180 and the OIE has 182, indicating a potentially broad use of their standards. However, there are no clear statistics showing to what extent the international standards are actually used in national regulations. This chapter utilizes extensive data on the “three sisters” ISBs and country legislation in order to shed light on the use of these international standards.

## B. ANALYSING INTERNATIONAL STANDARDS AND STYLIZED FACTS

### 1. A common language: the International Classification of Non-tariff Measures

In order to systematically assess the “three sisters” international standards, and to be able to compare them with national regulations, the International Classification of Non-tariff Measures (ICNTM) is used here.

As noted in chapter 1, ICNTM is maintained by UNCTAD in coordination with a group of international organizations – the Multi-Agency Support Team (MAST). ICNTM has 16 chapters. Each chapter is further broken down into more detailed measures types (see the example of SPS measures in the right-hand side of table 3.1). The “tree structure” allows for a rather fine-grained classification of measures. In total, ICNTM has 442 codes at the most disaggregated level.

Most important for this analysis of international standards are the classification chapters on SPS measures and TBT. The SPS chapter (A) and TBT chapter (B) consist of 34 and 23 NTM codes, respectively, at the finest level of detail.

<sup>3</sup> Legitimate objectives that are explicitly stated in the TBT Agreement are: national security requirements; the prevention of deceptive practices; and the protection of human health or safety, animal or plant life or health, or the environment.



chapter A on SPS measures. This reflects the fact that the products covered by those ISBs, by and large, are food, animal and plant products, whose regulation mostly fall under SPS measures. Indeed, that is why they are referenced in the WTO SPS Agreement.

The remaining 13% of NTMs belong to the TBT chapter. In general, requirements on product quality, product identification or animal welfare constitute TBT measures because they are not applied with the purpose of prevention of SPS risks. For example, the standard for eggplant requires that it must be intact, firm and fresh in appearance. Whether or not the eggplant is firm does not pose an SPS risk, but it is rather for quality purposes, which would be coded as a TBT measure. As a result, NTMs derived from ISBs feature both SPS and TBT measures.

Furthermore, the breakdown of NTMs by source shows considerable variation. While Codex Alimentarius covers more divergent NTMs, IPPC and OIE standards are concentrated more on few NTM categories. This variation stems from the fact that the three ISBs develop standards for different types of products, for which different regulations and measures are necessary and more important. For example, Codex Alimentarius covers more divergent group of products, which includes all foodstuffs from all sorts of plants and animals, and processed food and drinks. Conversely, most of the NTMs derived from IPPC are inspection requirement (A840). That

reflects the preponderance of selected IPPC standards, notably “Guidelines for Inspection”, which cover all plants and plant products, amounting to a vast number of products.

The most prevalent NTMs across the three sources are on storage and transport conditions (A640) and on hygienic practices during production (A420). Each covers about 10% of all observations. The product nexus helps put in perspective the importance of these two NTMs – transport and storage conditions as well as hygienic conditions during production are critical for food products. Further, the systems approach requirement, also known as a requirement for adopting the Hazard Analysis and Critical Control Point (HACCP) approach (A130), comes in third in importance. Labelling requirements, both SPS and TBT related, are also among the top 10 measures identified in the examined international standards and guidelines.

NTMs derived from the “three sisters” ISBs affect a limited scope of tradeable products. Defined in the trade nomenclature of HS, these primarily include food, plants, animals and products thereof. However, affected products also go beyond these sectors. For example, affected products also cover used vehicles, machinery and equipment utilized in agriculture, forestry and horticulture. The reason is that the WTO SPS Agreement defines an SPS measure based on its objective, not on the affected products.



**NTMs derived from international standards, by measure**

| NTM                                       | Total observations | Share (%) | Observation by source |      |       |
|-------------------------------------------|--------------------|-----------|-----------------------|------|-------|
|                                           |                    |           | Codex                 | IPPC | OIE   |
| A640: Storage and transport (SPS)         | 4 475              | 10.2      | 4 285                 | 0    | 190   |
| A420: Hygienic production practices (SPS) | 4 403              | 10        | 4 205                 | 0    | 198   |
| A130: Systems approach (SPS)              | 3 887              | 8.9       | 3 887                 | 0    | 0     |
| A310: Labelling (SPS)                     | 3 705              | 8.5       | 3 705                 | 0    | 0     |
| B310: Labelling (TBT)                     | 3 587              | 8.2       | 3 395                 | 2    | 190   |
| ...                                       | ..                 | ..        | ..                    | ..   | ..    |
| A840: Inspection requirements             | 855                | 2         | 349                   | 472  | 34    |
| ...                                       | ..                 | ..        | ..                    | ..   | ..    |
| Total                                     | 43 838             | 100       | 40 438                | 490  | 2 910 |

Source: UNCTAD TRAINS database and ESCAP. (For the full table, see online annex available at [www.unescap.org/resources/aptir-2019-online-annex-ntms-derived-international-standards](http://www.unescap.org/resources/aptir-2019-online-annex-ntms-derived-international-standards).)

**Products affected by NTMs derived from international standards, by HS chapter**

| HS Section                      | Total observations | Observations by source |      |       | Distinct HS6 products |
|---------------------------------|--------------------|------------------------|------|-------|-----------------------|
|                                 |                    | Codex                  | IPPC | OIE   |                       |
| Animal and animal products      | 19 944             | 17 160                 | 0    | 2 784 | 228                   |
| Vegetable products              | 14 049             | 13 664                 | 345  | 40    | 295                   |
| Foodstuffs                      | 9 100              | 9 014                  | 38   | 48    | 186                   |
| Mineral products                | 46                 | 46                     | 0    | 0     | 1                     |
| Chemicals and allied industries | 589                | 550                    | 1    | 38    | 61                    |
| Plastics/rubber                 | 4                  | 4                      | 0    | 0     | 2                     |
| Wood and wood products          | 87                 | 0                      | 87   | 0     | 76                    |
| Textiles                        | 19                 | 0                      | 19   | 0     | 19                    |
| Total                           | 43 838             | 40 438                 | 490  | 2 910 | 868                   |

Source: UNCTAD TRAINS database and ESCAP.

Table 3.3 provides an overview to that end. It shows the affected products that NTMs from ISBs define. First, NTMs affect, by and large, agricultural products. Indeed, animal, vegetable and foodstuff products make up 95% of all observations. Second, NTMs from the Codex Alimentarius drive this pattern, accounting for the greatest share. Third, in total, ISBs affect 868 unique HS6 products – around 17% of the HS product universe that countries trade in and regulate. As mentioned, the limited range of affected products reflects the clearly-defined mandate of the WTO SPS Agreement, the remit of which is confined to SPS objectives.

### C. ASSESSING OVER-REGULATION, UNDER-REGULATION AND OVERALL “REGULATORY DISTANCE” BETWEEN INTERNATIONAL STANDARDS AND NATIONAL LEGISLATION

This section takes a first look at the similarity between the “three sisters” ISBs and national legislation. The approach followed here is similar to regulatory distance that is discussed in chapter 2, except that instead of comparing the regulations bilaterally between economies, the comparison is made for each economy with international standards. The 57 categories of SPS measures and TBT distinguished in ICNTM are used for a comparison across many countries and products. However, within

each of these 57 measure types, there can still be major differences in detail and sub-requirements. For a closer inspection of those detailed differences, product-specific case studies are given in section D.

#### 1. Assessing over- and under-regulation across products and countries

Table 3.2 in the previous section introduced the most frequent NTM categories derived from the “three sisters” ISBs. At this level of detail, the standards recommendations are compared with national mandatory legislation in a number of countries covered in the UNCTAD TRAINS database. The approach is illustrated in table 3.4.

In this example, country *i* and ISBs both apply certain maximum residue limits (A21) to the product, here referred to as a “match in regulation” (1;1 pair). As neither ISB nor the country apply fumigation requirements (A53), this is referred to as a “match in non-regulation” (0;0 pair). Both matches in regulation and non-regulation are considered as regulatory similarity. The next row shows that country *i* applies certain product quality requirements (B7), whereas ISBs do not. This case is considered “over-regulation” vis-à-vis the ISB recommendations. The last row shows the opposite case where country *i* does not require hygienic production practices (A42), but which are recommended by ISBs. This is referred to as “under-regulation”. A more detailed and

**Example of data mapping comparing international standards and country legislation**

| NTM types and codes for a specific product at HS6 level, e.g., beef | Country <i>i</i> | International standards recommendation | Interpretation                |
|---------------------------------------------------------------------|------------------|----------------------------------------|-------------------------------|
| A21: Maximum residue limit (SPS)                                    | Yes (1)          | Yes (1)                                | Match in regulation (1;1)     |
| A53: Fumigation (SPS)                                               | No (0)           | No (0)                                 | Match in non-regulation (0;0) |
| B7: Product quality (TBT)                                           | Yes (1)          | No (0)                                 | Over-regulation (1;0)         |
| A42: Hygienic production practices                                  | No (0)           | Yes (1)                                | Under-regulation (0;1)        |
| ... up to 57 rows of possible NTMs                                  | ...              | ...                                    | ...                           |

technical explanation of this method is laid out in the online annex to this chapter.<sup>4</sup>

Table 3.4. also illustrates the fact that countries can both over-regulate and under-regulate at the same time. In this example, both country *i* and ISBs each apply two measures to the product. Still, country *i* over-regulates one measure (B7) and under-regulates another (A42).

Importantly, this analysis is based on a large amount of data. First, there are not just four rows of possible NTMs as shown in the example, but up to 57 rows for all possible SPS and TBT measure types. Furthermore, 868 products are considered for which there are “three sisters” ISB policy recommendations (table 3.3). Last, ISBs of many countries are compared. Through aggregation across NTM types and products, counting cases of over-regulation and under-regulation separately, gives a general idea of the overall adherence by countries to ISB recommendations.

Figure 3.2 shows the average number of over-regulated and under-regulated NTMs per product, vis-à-vis international standards. For example, India over-regulates about eight NTMs per product (vertical axis) and under-regulates about five NTMs per product (horizontal axis).

The (0;0) position can be interpreted as the perfect match with the regulatory recommendations of international standards. The country that comes closest to this is New Zealand, with an average

number of 3.1 over-regulated NTMs and 6.5 under-regulated NTMs per product.

*“Over-regulation is likely to result in higher import and consumer prices, whereas under-regulation may expose the population to higher health or environmental risks.”*

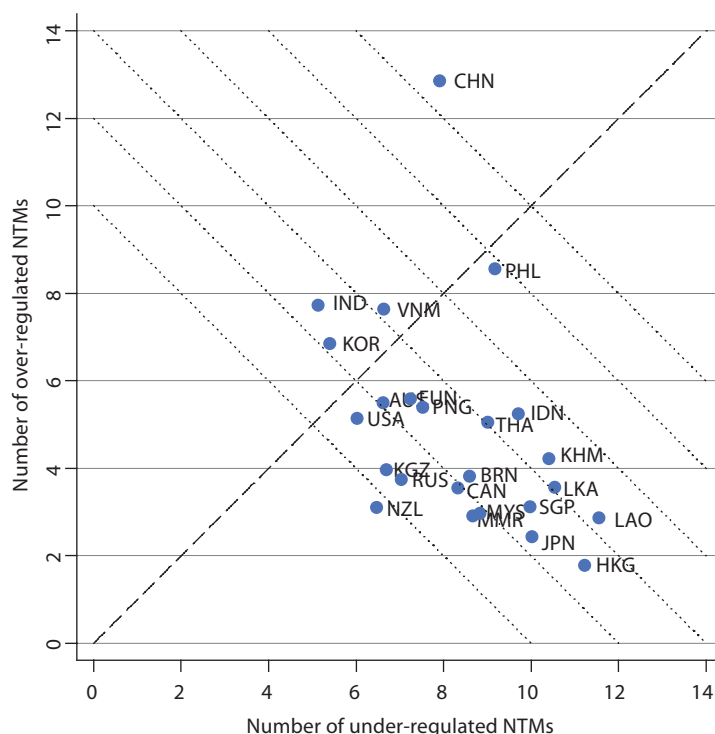
Countries that tend to over-regulate are likely to have higher import and consumer prices, whereas countries that under-regulate may expose their population to higher health or environmental risks. Countries above the dashed 45° line tend to over-regulate more than they under-regulate. This is the case for China, India, the Republic of Korea and Viet Nam. All other countries below the 45° line tend to under-regulate vis-à-vis “three sisters” ISB recommendations. As a point of reference, the “three sisters” ISBs recommend, on average, 13.6 NTMs per product. The countries shown in figure 3.2 impose, on average, 10 NTMs per product. This certainly explains the overall tendency to under-regulate, as shown in figure 3.2. However, only half (5.2) of those 10 NTMs applied by the average country match the ISB recommendations. This further increases divergence from ISB recommendations and leads to an average of 8.4 under-regulated NTMs per product.

The parallel dotted lines in figure 3.2 show points with the same overall “distance” from the ISB recommendations, counting over-regulation and under-regulation equally. For example, the Republic

<sup>4</sup> [www.unescap.org/resources/aptir-2019-online-annex-methodology-assess-regulatory-difference-and-regulatory-distance](http://www.unescap.org/resources/aptir-2019-online-annex-methodology-assess-regulatory-difference-and-regulatory-distance).



**Average number of over- and under-regulated measures (per product) vis-à-vis international standards, by country**



Source: UNCTAD and ESCAP calculations.

Notes: AUS – Australia; BRN – Brunei Darussalam; CAN – Canada; CHN – China; EUN – European Union; HKG – Hong Kong, China; IDN – Indonesia; IND – India; JPN – Japan; KGZ – Kyrgyzstan; KHM – Cambodia; KOR – Republic of Korea; LAO – Lao People’s Democratic Republic; LKA – Sri Lanka; MMR – Myanmar; MYS – Malaysia; NZL – New Zealand; PHL – Philippines; PNG – Papua New Guinea; RUS – Russian Federation; SGP – Singapore; THA – Thailand; USA – United States; and VNM – Viet Nam.

of Korea and Australia lay on the same dotted line. The Republic of Korea over-regulates about 6.8 NTMs per product and under-regulates 5.4 NTMs per product; in sum, 12.2 differences from the ISB recommendations. Australia over-regulates about 5.5 NTMs per product and under-regulates 6.6 NTMs per product, in sum, 12.1 differences from the ISB recommendations. While the Republic of Korea tends to over-regulate and Australia tends to under-regulate, both are similar in their overall “distance” to the ISB benchmark. The following subsection further assesses this perspective.

Of course, this approach of binary similarities and differences cannot replace a detailed review of individual NTMs for specific products. For example, tolerance limits for residues (A21) can be determined for many substances. The Codex lists more than 200

dangerous substances and respective residue limits for each substance. While a “match in regulation” (1;1 pair) may be seen, as shown in table 3.4, there may be substantial differences in detail. As important as a detailed NTM-and-product-specific analysis may be, it is not feasible to conduct this for hundreds of products, dozens of measures and countries.

## 2. “Regulatory distance” between countries and ISBs in a single metric

The previous subsection distinguishes between over-regulation and under-regulation as the two sides of “regulatory difference”. This subsection goes one step further and reduces regulatory distance to a single indicator. The objective is to employ the indicator to simultaneously compare ISBs with countries and countries with each other.

For this single indicator, this chapter draws from, and refines, the regulatory distance metric first introduced by UNCTAD in Cadot and others (2015) and used in chapter 2. It starts out by following the same logic as that presented in table 3.4 and the previous subsection, using the NTM classification to assess similarities and differences in regulation between countries and ISB recommendations. The main distinction is that cases of over-regulation and cases of under-regulation are counted equally towards the indicator of regulatory distance. The rationale for this step is that over-regulation and under-regulation are counted as being equally undesirable, albeit for different reasons – over-regulation because it is economically costly, and under-regulation because it may cause health risks to humans, animals or plants.

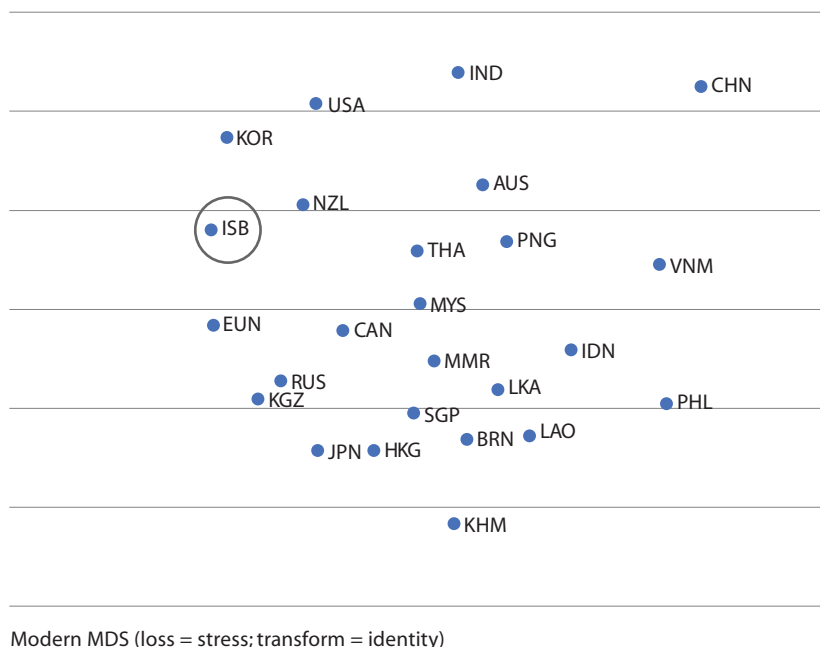
When countries diverge, a regulatory distance of 1 is registered, irrespective of whether it is a case of over-regulation (1;0) or under-regulation (0;1). In all

other cases, i.e., matches of regulation (1;1) or non-regulation (0;0), the regulatory distance is 0. To analyse regulatory patterns, the average “distance” across measures and products is calculated. This yields a single indicator between each pair of countries, and between each country and the “three sisters” ISB recommendations. For a more detailed and analytical explanation of the calculation, refer to the online annex to this chapter.<sup>5</sup>

Having called the indicator the regulatory distance, alluding to geographical distances that also cause trade costs, a “multi-dimensional scaling” method is employed that illustrates the results like a geographical map. Figure 3.3 plots all bilateral distances between countries and ISBs in a two-dimensional map. The interpretation focuses entirely on distances between the indicated points for countries/ISBs. The position of points on the horizontal and vertical axes is meaningless in this graph.



**Overall regulatory distance map**



Source: UNCTAD and ESCAP calculations.

Notes: AUS – Australia; BRN – Brunei Darussalam; CAN – Canada; CHN – China; EUN – European Union; HKG – Hong Kong, China; IDN – Indonesia; IND – India; ISB – International Standardizing Bodies; JPN – Japan; KGZ – Kyrgyzstan; KHM – Cambodia; KOR – Republic of Korea; LAO – Lao People’s Democratic Republic; LKA – Sri Lanka; MMR – Myanmar; MYS – Malaysia; NZL – New Zealand; PHL – Philippines; PNG – Papua New Guinea; RUS – Russian Federation; SGP – Singapore; THA – Thailand; USA – United States; and VNM – Viet Nam.

<sup>5</sup> [www.unescap.org/resources/aptir-2019-online-annex-methodology-assess-regulatory-difference-and-regulatory-distance](http://www.unescap.org/resources/aptir-2019-online-annex-methodology-assess-regulatory-difference-and-regulatory-distance).

For example, the distance between ISBs and New Zealand is short, whereas the distance between ISBs and China is long. This confirms conclusions previously made in figure 3.2.

*“It is mostly developed countries that come close to the reference point of ‘three sisters’ ISB recommendations.”*

Overall, it is notable that in most of the cases only developed countries come close to the reference point of “three sisters” ISB recommendations. This may be a consequence of a stronger involvement of developed countries in the process of standard-setting. The countries closest to ISBs also tend to be important traders of agricultural goods – as exporters such as New Zealand, importers such as the Republic of Korea or both, such as the European Union and the United States.

While not distinguishing over- and under-regulation, regulatory distances between countries can also be compared. For example, while the Republic of Korea and the Russian Federation are both relatively close to the ISB recommendations, they are quite far apart from each other. This would indicate that they achieve similarity to international standards, but in such different ways that it does not lead to trade-promoting regulatory similarity between them. Conversely, Malaysia and Thailand are closer to each other than to the ISB recommendations. In fact, they are among each other’s main trading partners and it is presumed here that the evident regulatory similarity is a contributing factor. Most other ASEAN member States also appear in a cluster of relative proximity, but notably those ASEAN members with a lower share of intra-ASEAN trade appear more distant from the rest of the group (Viet Nam, Cambodia, the Philippines, Indonesia). The regulatory proximity of Singapore, Brunei Darussalam and Hong Kong, China should also be noted. The proximity of the Russian Federation and Kyrgyzstan may also show the impact of the Eurasian Economic Union.

The high levels of over-regulation and under-regulations observed for China in figure 3.2 also manifest in a high overall regulatory distance from ISBs and other countries in figure 3.3. While the European Union, the United States and Australia appear close in figure 3.2, they exhibit a relatively high regulatory distance from each other. This

indicates that, while having similar numbers of NTMs, their regulatory structures tend to be quite different.

## D. ASSESSING REGULATORY STRINGENCY BETWEEN INTERNATIONAL STANDARDS AND NATIONAL LEGISLATION

The preceding section used metrics that compare types of NTMs used in national legislation vis-à-vis international standards. However, having the same type of NTMs does not mean that they have a similar level of stringency. Depending on detailed requirement criteria, one measure can be more stringent than the other measures of the same type.

For example, consider that both an international standard and a country’s regulation have a labelling requirement for SPS reasons (A31) on pre-packaged food. On the one hand, the international standard requires an importer to label the country of origin on the product. On the other hand, the country’s regulation requires labelling not only the country of origin, but also the expiry date, ingredients and name of the importer in black colour in the country’s national language. In such cases, although both measures are the same A31, the measure imposed by the country’s regulation is more stringent than that of the international standards.

For an in-depth understanding and comparison of NTMs, it is important to open the black box of the NTM type (e.g., A31) and look into their stringency based on their detailed criteria (e.g., labelling contents, labelling colour and labelling language). This section describes three case studies on stringency of NTMs concerning the import of cashew nuts in Viet Nam, fresh apples in Bangladesh and animal feed in the Lao People’s Democratic Republic in relation to international standards adopted by the “three sisters” ISBs.

### 1. Methodology

After selecting countries and products of interests, the three case studies were built on the NTM data collected from national regulations of the country (hereafter, “country NTMs”) as well as from international standards (hereafter, “international standard NTMs”). Where the NTM types overlap between the two, a text analysis was undertaken and

each type of NTMs was decomposed into several detailed criteria – in other words, opening the black box. Then the individual criterion of the country NTMs were organized into the following five stringency categories that reflect the perspective of a country. For a more detailed description of the methodology, see the online annex to this chapter:<sup>6</sup>

- Over-regulated criterion: When the criterion exists only in country NTMs. For example, maximum residue limit of a harmful substance, Aflatoxin B1, exists only in Vietnamese regulations.
- Under-regulated criterion: When the criterion does not exist in country NTMs but only in international standard NTMs. For example, a maximum residue limit of harmful substance, Aflatoxin B1, does not exist in Vietnamese NTMs but is only in the Codex Alimentarius.
- Similar criterion: When the criterion exists in both country NTMs and international standard NTMs and it is equally strict. For example, the maximum residue limit of a harmful substance, Aflatoxin B1, exists both in Vietnamese regulations and the Codex Alimentarius. The limit, 5µg/kg, is the same in both cases.
- Stricter criterion: When the criterion exists in both country NTMs and international standard NTMs but the criterion in the country NTMs is stricter. For example, a maximum residue limit of a harmful substance, Aflatoxin B1, exists both in Vietnamese regulations and the Codex Alimentarius. However, Vietnamese regulations set the stricter limit of 1µg/kg.
- Less strict criterion: When the criterion exists both in country NTMs and in international standard NTMs, but the criterion in the country NTMs is less strict. For example, the maximum residue limit of a harmful substance, Aflatoxin B1, exists both in Vietnamese regulations and the Codex Alimentarius. However, Vietnamese regulations set a less strict limit of 10µg/kg.

This allowed each NTM type to be presented as shares of the five categories. For example, A21 on maximum residual limits for SPS reasons that Vietnamese regulations imposed on cashew nuts is 50% equally strict (3 out of 6 criteria), 33% over-regulated (2 criteria) and 17% stricter (1 criterium) than the international standards on cashew nuts.

## 2. Results

The following country and product case studies were selected:

- Viet Nam – cashew nuts in shell (HS 080131). Viet Nam is the leading exporter of shelled cashew nuts (HS 080132), capturing more than 60% of the global market share. At the same time, Viet Nam's cashew nuts exports are highly dependent on the import of cashew nuts in shells. Comparing trade regulations of this intermediate input with international standards is critical for this value chain. First, harmonization with international standards could result in the cost-effective import of intermediate inputs. Second, the domestic processing is closely related to sustainable development goals in terms of labour and environmental issues;
- Bangladesh – fresh apple (HS 080810). While Bangladesh does not produce apples, its middle class is gradually demanding more diversified foods, including imported fresh apples. Indeed, today fresh apples are one of the most imported fresh fruits in Bangladesh. During the past five years, Bangladesh imported apples totalling \$540.80 million. Moreover, private sector associations, such as the Bangladesh Fresh Fruits Importer Association, have voiced great interest in further understanding the regulatory burden vis-à-vis international standards;
- The Lao People's Democratic Republic – animal feed (HS 230990). The Lao People's Democratic Republic remains an agricultural, semi-subsistence economy, in which animal feed serves as a critical input for the plantation and livestock sector. Indeed, animal feed saw high import values during recent years, amounting to around \$26 million-\$32 million annually between 2015 and 2018. Furthermore, consultations with stakeholders confirmed the need to understand the extent to which national regulations are in line with international standards.

The following list summarizes the NTMs that these countries impose, those that are recommended by international standards, and those that overlap between the two (see online annex table 3.1<sup>7</sup> for further details):

<sup>6</sup> [www.unescap.org/resources/aptir-2019-online-annex-methodology-assessing-regulatory-stringency-ntms](http://www.unescap.org/resources/aptir-2019-online-annex-methodology-assessing-regulatory-stringency-ntms).

<sup>7</sup> [www.unescap.org/resources/aptir-2019-online-annex-ntms-derived-international-standards](http://www.unescap.org/resources/aptir-2019-online-annex-ntms-derived-international-standards).

- For cashew nuts in shell, Vietnamese regulations apply 21 types of NTMs, while the international standards apply 31 types of NTMs. They share 11 NTM types in common;
- For fresh apples, Bangladesh regulations apply 19 types of NTMs, while the international standards apply 29 types of NTMs. They share 9 NTM types in common;
- With regard to animal feeds, the Lao People's Democratic Republic regulations apply 15 types of NTMs, while the international standards apply 34 types of NTMs. They share 6 NTM types in common.

It should be noted that the international standards recommend more types of NTMs (between 31 and 34) than those imposed by the above three countries (between 15 and 21 types). Of these measures, 6 to 11 measures overlap (see online annex table 3.2<sup>8</sup>). This means that about half of NTMs applied by these countries are the same types as in the international standards.

*“Even when the countries examined in the case studies apply the same type of NTMs as the international standards, the NTMs often have a different level of regulatory stringency.”*

In the case of the 6 to 11 types of overlapping NTMs, the text analysis of national regulations and the international standards revealed that even when Viet Nam, Bangladesh and the Lao People's Democratic Republic apply the same type of NTMs as the international standards, the NTMs often have a different level of regulatory stringency. Depending on the product, country and NTM type, a country NTM is more or less stringent than an international standard NTM.

Figures 3.4 to 3.6 show the results of regulatory stringency for each of the three country case studies. The horizontal axis shows the overlapping types of NTMs as reflected in the column “Commonly existing NTMs” in online annex table 3.2.<sup>9</sup> The vertical axis shows a proportion of five stringency categories for each NTM type, as explained above. Furthermore, dimensions above 0 indicate the share of over-regulated or stricter criteria that a country NTM has

vis-à-vis an international standard NTM. Conversely, dimensions below 0 indicate a share of under-regulated or less strict criteria of a country NTM in comparison to an international standard NTM. Therefore, one can visually grasp that the higher the dimension that a bar plot is located in, the more stringent a country NTM is than in the case of the same type of international standard NTM. In the discussion below, the perspective of the countries in the case studies is taken into account when evaluating regulatory stringency.

Figure 3.4 shows the relative stringency in Viet Nam's NTMs on cashew nuts vis-à-vis international standard NTMs. Three findings stand out. First, the white bar plots represent the share of the similarly stringent criteria. Of 11 types of NTMs that overlap between Viet Nam and international standards, 8 types are also partially similar in terms of stringency (indicated by the white areas). The share of similarly stringent criteria varies from 16% to 50%, depending on the NTM type.

Second, individual NTM types tend to exhibit a heterogeneous pattern of dissimilarity. Some NTMs in Viet Nam are more stringent (indicated by bars above zero in figure 3.4). However, others are notably less stringent (indicated by the bars below zero in figure 3.4). Specifically, Viet Nam's A83 and B83 on certification requirements exhibit greater regulatory stringency than those of international standards. For example, Viet Nam requires a certificate with regard to food containing genetically modified ingredients and irradiated food, unlike the international standards. Consideration of the context of Viet Nam's cashew value chain can shed light on this result. Viet Nam's overall export competitiveness in shelled cashews highly relies on the import of cashew nuts in shell, the product of interest. As a result, certification standards for this intermediate input serve to safeguard its quality and help underpin its value proposition.

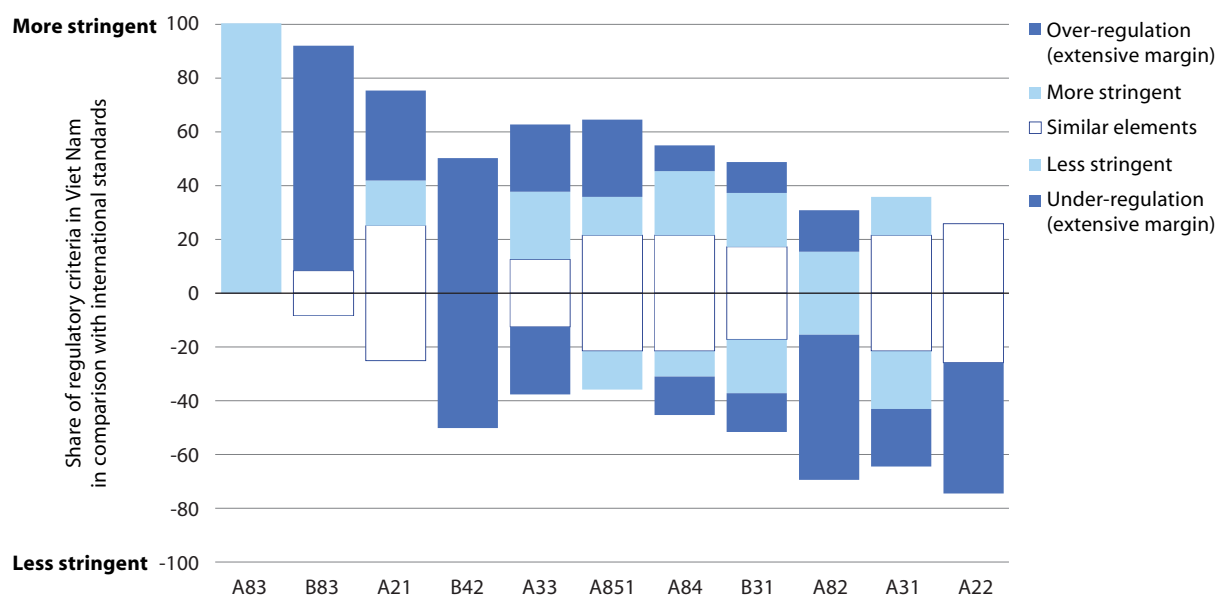
Third, types of divergence that drive dissimilarity in regulatory stringency between Viet Nam's NTMs and international standards are considered. Divergence is mostly due to criteria that only exist in either Vietnamese regulations or the international standards (dark blue areas in figure 3.4). Viet Nam's more stringent NTMs exhibit a large share of the over-

<sup>8</sup> [www.unescap.org/resources/aptir-2019-online-annex-methodology-assess-regulatory-difference-and-regulatory-distance](http://www.unescap.org/resources/aptir-2019-online-annex-methodology-assess-regulatory-difference-and-regulatory-distance).

<sup>9</sup> Ibid.

**Figure 3.4**

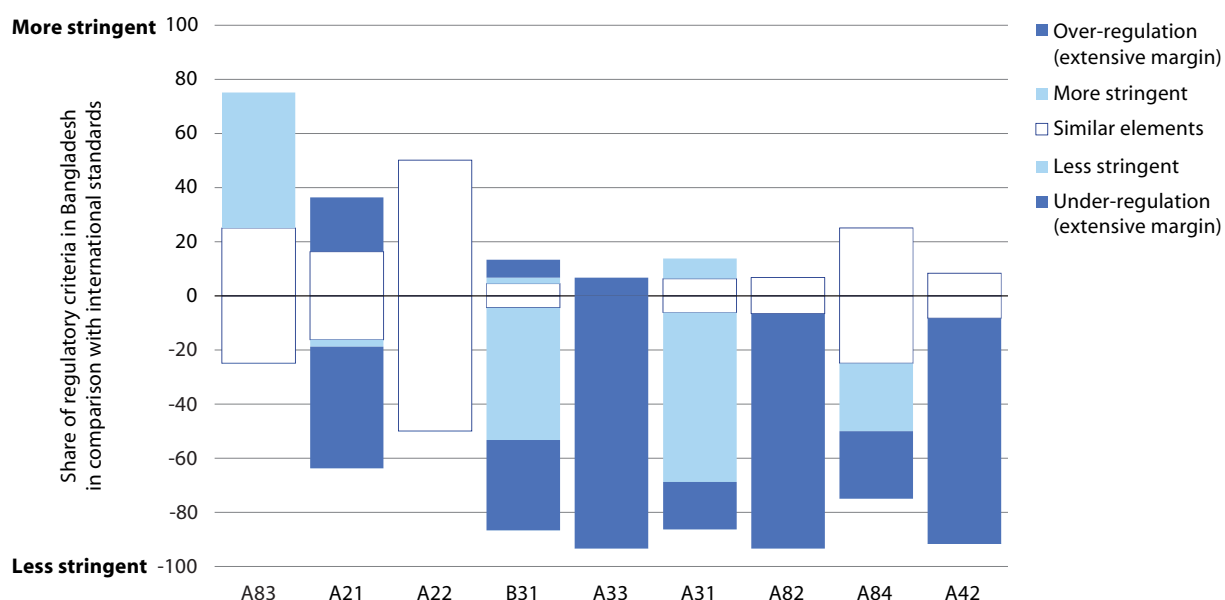
### Regulatory stringency in Viet Nam's imports of cashew nuts in shell, by NTM type



Source: UNCTAD and ESCAP calculations.

**Figure 3.5**

### Regulatory stringency in Bangladesh's imports of fresh apples, by NTM type



Source: UNCTAD and ESCAP calculations.

regulated criteria that lack any equivalence in international standards. By the same token, its less stringent NTMs show a large share of the under-regulated criteria; in other words, the criteria that are absent in Viet Nam.

Figure 3.5 reveals the findings of regulatory stringency for imports of fresh apples in Bangladesh. As before, the three concepts of overall similarity, pattern of dissimilarity and driving margin are used to evaluate regulatory stringency. First, the NTMs in Bangladesh display moderate similarity in regulatory stringency vis-à-vis international standard NTMs. All NTMs have some share of similarly stringent criteria, which is on average 31%.

Notably, Bangladesh's A22 on the restricted use of certain substances for SPS reasons has 100% similar stringency to that of the international standards. However, this does not represent an anomaly: in the absence of national standards, many developing countries adopt the ISBs' international standards *per se* as its own standards. In this case, Bangladesh adopted the Codex Alimentarius's "General Standard for Food Additives (CODEX STAN 192-1995)" as its own standards. In fact, section 9 (3) of the "Use of Food Additives Regulations, 2017" of Bangladesh

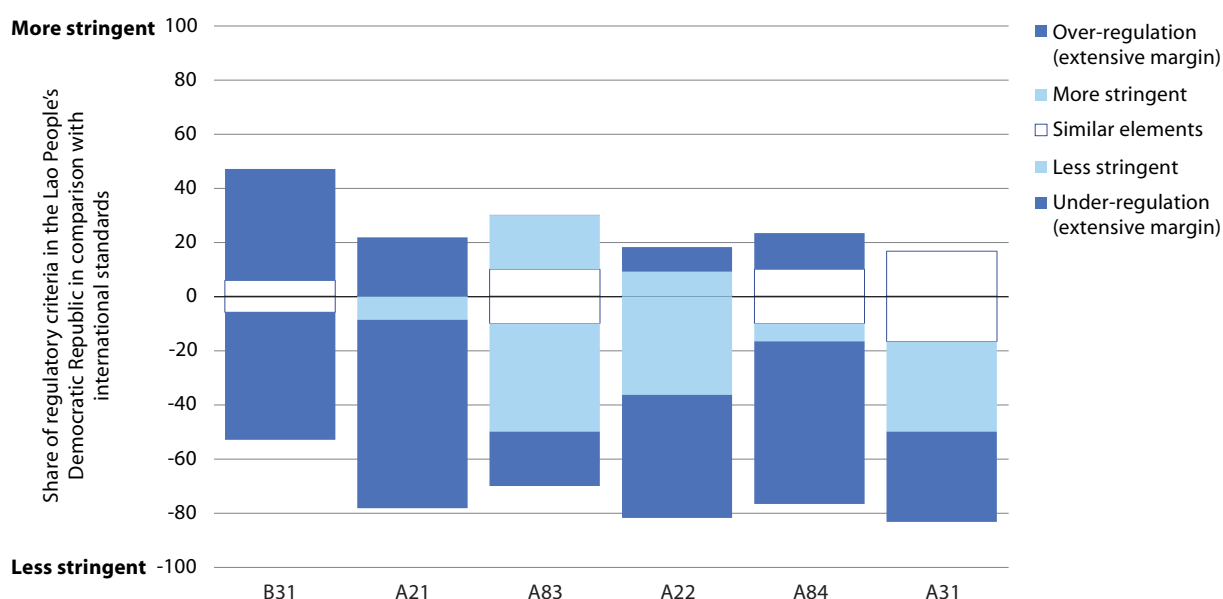
states that if the Regulation does not mention the name of specific food additives or others relevant agents, the "General Standard for Food Additives (CODEX STAN 192-1995)" should be followed (Bangladesh Nirapod Authority, 2017). In addition, the Bangladesh Standard and Testing Institute (BSTI) Standard Catalogue, 2018 lists international standards that are adopted as Bangladesh standards (BSTI, 2018).

Second, Bangladesh's NTMs are largely less stringent and under-regulated vis-à-vis international standards (light and dark blue areas, respectively, below 0 in figure 3.5). On average, less strict and under-regulated criteria amount to 58% of all detailed criteria. Further, this regulatory laxness is most pronounced for A33 on packaging requirements, A31 and B31 on labelling requirements as well as A82 on conformity assessment requirements.

Last, under-regulated criteria – which are absent in Bangladesh's NTM despite being recommended by the international standards – tend to dominate. They shape A82 on conformity assessment requirements, A33 on packaging requirements, A21 tolerance limits for residues and A42 on hygienic practices (dark blue areas below 0 in figure 3.5). Two distinctive



**Regulatory stringency in the Lao People's Democratic Republic's imports of animal feeds, by NTM type**



Source: UNCTAD and ESCAP calculations.

exceptions are A31 and B31 on labelling requirements, which are driven by overwhelmingly less strict criteria (light blue areas below 0).

Figure 3.6. shows the relative stringency in the Lao People's Democratic Republic's regulation of animal feed vis-à-vis international standards. The same conceptual structure is used to evaluate regulatory stringency here, focusing on overall similarity, pattern of dissimilarity and driving margins. First, compared with the previous case studies, the Lao People's Democratic Republic NTMs exhibit the lowest similarity with international standards. Only a few and small white bar plots associated with regulatory similarity are shown. On average, the share of similarly stringent criteria for all NTM types is just 14%.

Second, dissimilarity is driven by less stringent or under-regulated criteria (bars below 0 in figure 3.6). Last, under-regulated criteria (dark blue areas), rather than less strict criteria (light blue areas), drive this pattern of regulatory laxness.

In summary, the Lao People's Democratic Republic has the smallest overlap with international standards, both in terms of both NTM types (only six overlapping types) and NTM stringency (only 14% are similarly stringent on average). Also, those six overlapping NTM types are all less stringent. This hints at the limited capacity of the Lao People's Democratic Republic in various aspects. First, the country has limited capacity to formulate NTMs. It is not fully exploiting the benefit of using international standards. Further, many of the regulations that could have been in line with international standards remain outdated, such as the *Quality Animal Feed Standard and Animal Feed Recipes Handbook, 2001* (Lao People's Democratic Republic, 2001). Second, the capacity to enforce the NTMs may also be low. Generally, the country lacks technical expertise in the area of animal feed along the value chain. In addition, existing animal feed laboratories need more resources.

## E. CONCLUSION

The objective of this chapter was the assessment of the use of international standards and their similarity to national technical regulations. Technical regulations have important non-trade objectives of protecting health, safety and the environment, yet they also raise production and trade costs, affecting economic development. A significant trade barrier,

especially for middle- and lower-income countries as well as small and medium-sized enterprises, is the heterogeneity of regulations. International standards are aimed at harmonizing national regulations and standards. The international standards referenced in the WTO SPS Agreement, the “three sisters” of Codex Alimentarius, and IPPC and OIE standards, have even been developed to provide “appropriate levels of protection” while facilitating trade. They provide a natural reference point as the benchmark against which national measures and regulations are evaluated.

The structural regulatory similarity analysis compares national regulations with the “three sisters” international standards at the level of ICNTM. Most countries analysed here diverge from the recommendations of the standards and have less measures. A likely reason is that many developing countries lack the necessary quality infrastructure to assess conformity, and thus apply less regulations. Many of the countries with a relatively high similarity to the international standards are significant agricultural goods traders, either as agricultural exporters such as New Zealand – which is a Cairns Group member – or as food importers, such as the Republic of Korea.

While such structural analysis allows the assessment of many countries, it does not allow the comparison of the stringency of national regulations with international standards. A regulatory stringency approach was applied in the case studies looking at certain products in Bangladesh, the Lao People's Democratic Republic and Viet Nam. The analysis of regulatory stringency confirmed the findings about the regulatory structure. Where countries diverge from the international standards, they more often underregulate than overregulate. A sector that is relatively more integrated in global value chains is closer to the international standard than other sectors.

This analysis focused on laws and regulations and did not assess the actual implementation of those regulations. It is very likely that, in some cases, implementation in terms of border controls checking conformity assessments is lagging behind the formal requirements including due to a lack of institutional and quality infrastructure. As such, chapter 4 looks at best practices and recommendations on these issues as well as others to streamline NTMs for sustainable development.

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## ONLINE DATABASE

UNCTAD. Trade Analysis Information System (TRAINS) database. Available at <https://trains.unctad.org/>.





# Streamlining non-tariff measures for sustainable benefits

The preceding chapters highlighted that NTMs can have both positive and negative effects on trade, investment and sustainable development, depending on their nature, the product to which they are applied, the way they are implemented, and the social, political, economic and environmental context. The key to maximizing benefits are good regulatory practices and reducing the cost of compliance with legitimate NTMs. Surveys of private sector traders presented in chapter 2 (ESCAP and ITC, 2019) and analytical evidence (Knebel and Peters, 2019) clearly call for reducing regulatory distance between countries and streamlining procedural obstacles associated with NTMs.

*“Streamlining NTMs is the key to maximizing their benefits for sustainable development.”*

Many of the burdensome NTMs originate abroad. At the same time, lack of transparency and inefficient domestic procedures – regardless of whether the NTMs originate at home or abroad – remain key issues for traders. Both regional and multilateral cooperation as well as domestic efforts are therefore needed to reduce the burden associated with compliance with NTMs and to strengthen positive impacts. In this context, this chapter focuses on good practices to streamline NTMs, both at the national, subregional and regional levels.

## A. STREAMLINING NON-TARIFF MEASURES AT THE DOMESTIC LEVEL TO LOWER TRADE COSTS

While most burdens may result from export partners' NTMs, most countries also have room for improving their own NTMs. This section highlights good practices which countries may consider implementing at the national level in NTM design, development and implementation.

### 1. Regulatory audits: reviewing existing NTMs

*“Reviewing existing NTMs and, where feasible, adopting international standards can greatly reduce costs arising from variations in national regulations.”*

A useful starting point for increasing net benefits from streamlining NTMs is through the review of existing NTMs to eliminate unnecessary ones, and to improve the design of existing and future measures.<sup>1</sup> Regulatory reviews can identify duplications or inconsistencies that can be streamlined to boost efficiency. In this regard, existing and evolving international standards can be used as benchmarks when feasible, as discussed in chapter 3. Reviewers should also ensure that the technical measures are non-discriminatory, i.e., they are fully consistent with related domestic policies and requirements applicable to domestic producers and products. Development and maintenance of a national NTM database based on the internationally agreed NTM

classification (introduced in chapter 1) facilitates the review.

For example, under the Eleventh Malaysia Plan: 2016-2020, Malaysia has drawn up comprehensive and specific actions to drive up productivity. It is specifically removing NTMs where costs outweigh benefits and that impede business growth, and is improving the logistics sector in an effort to forge a robust business ecosystem. As part of accomplishing this, NTMs, that were collected by UNCTAD and the Economic Research Institute for ASEAN and East-Asia (ERIA) together with Malaysia (ERIA, 2019), are profiled for data analysis and verified, possible and potential issues identified, industry engaged through public consultations, and recommendations validated with Ministries, agencies and experts. Moving forward, the process will establish a centralized NTM database, repeal acts and regulations that are no longer relevant, review redundant NTMs, streamline inter-agency export/import processes and procedures, and address cross-cutting issues faced by multiple ministries (Malaysia Productivity Corporation, 2018).

### 2. Regulatory impact assessment for newly proposed NTMs

At the domestic level, regulatory impact assessment of NTMs may be conducted to highlight areas for streamlining and explore the balance between potential costs and benefits. An increasing number of countries have established or strengthened assessments that must be conducted before new NTMs are issued.

*“Impact assessment of newly proposed NTMs should be systematically conducted, including through stakeholder consultations which may be conducted online.”*

For example, the Government of New Zealand has published guidelines on “Government expectations for good regulatory practice”.<sup>2</sup> These guidelines list expectations that it has of the regulatory system,

<sup>1</sup> Note that an NTM review is a post-enactment procedure that may include a performance evaluation assessing to what extent regulations deliver the intended outcomes, while regulatory impact assessment is generally undertaken pre-enactment. Both are important.

<sup>2</sup> <https://treasury.govt.nz/sites/default/files/2015-09/good-reg-practice.pdf>.

noting that any regulatory system, including NTMs, should be an asset for New Zealanders, not a liability. Some of the more pertinent provisions include the requirement that regulations must:

- Achieve those objectives in the least-costly way, and with the least adverse impact on market competition, property rights, and individual autonomy and responsibility;
- Be flexible enough to allow regulators to adapt their regulatory approach to the attitudes and needs of different regulated parties, and allow those parties to adopt efficient or innovative approaches to meeting their regulatory obligations;
- Have processes that produce predictable and consistent outcomes for regulated parties across time and place;
- Be proportionate, fair and equitable in the way it treats regulated parties;
- Be consistent with relevant international standards and practices in order to maximize the benefits from trade and from cross-border flows of people, capital and ideas (except when this would compromise important domestic objectives and values);
- Be well-aligned with existing requirements in related or supporting regulatory systems through minimizing unintended gaps or overlaps, and inconsistent or duplicative requirements;
- Conform to established legal and constitutional principles and support compliance with New Zealand's international obligations;
- Set out legal obligations and regulatory expectations and practices in ways that are easy to find, easy to navigate, and clear and easy to understand;
- Have scope to evolve in response to changing circumstances or new information on the regulatory system's performance.

As part of regulatory impact assessments, stakeholder consultation mechanisms are essential to gauging the necessity as well as the positive and negative effects of an NTM on different groups. Due to the transboundary nature of NTMs, this includes not just domestic stakeholders, but also trader partners'

stakeholders. This is well-recognized in both the WTO TBT and SPS Agreements, which require that draft measures be notified to the WTO membership before they are put in place. Rather than having to check constantly if there are any new notifications to the WTO, the ePing system is now available to ensure that as soon as any new or updated NTMs are notified, all stakeholders (from government and the private sector) receive a notification. The ePing<sup>3</sup> is an online SPS and TBT notification alert system that enables timely access to evolving product requirements and facilitating dialogue among the public and private sectors in addressing potential trade problems at an early stage. More than 4,000 notifications on product requirements are circulated annually through ePing. If not already in place, similar systems may be established at the national level to facilitate consultation among stakeholders about newly proposed NTMs.<sup>4</sup>

## **B. TRADE FACILITATION AS THE KEY TO REDUCING THE COST OF NON-TARIFF MEASURES**

As pointed out by traders (see chapter 2 section C), the procedural obstacles associated with an NTM are often more burdensome than the technical requirements it sets. Lack of risk-based inspections is also a major issue (STDF, 2019a). Trade facilitation is therefore the key to reducing the burden of NTMs for traders (see chapter 2, and ESCAP and ITC, 2019). The results of the United Nations Global Survey on Digital and Sustainable Trade Facilitation (United Nations, 2019) provide an overview of trade facilitation implementation in the region (figure 4.1).<sup>5</sup> According to the survey, Asia-Pacific countries have, on average, implemented about 60% of a comprehensive set of measures, which includes the WTO Trade Facilitation Agreement (TFA) measures as well as more advanced digital trade facilitation measures, such as electronic issuance and exchange of SPS and origin certificates. South-East and East Asian countries are generally well above the regional average (70%), while Pacific islands lag far behind (35%). Therefore, despite the significant progress made over the past two years, the survey suggests that the region still has room for significant improvement.

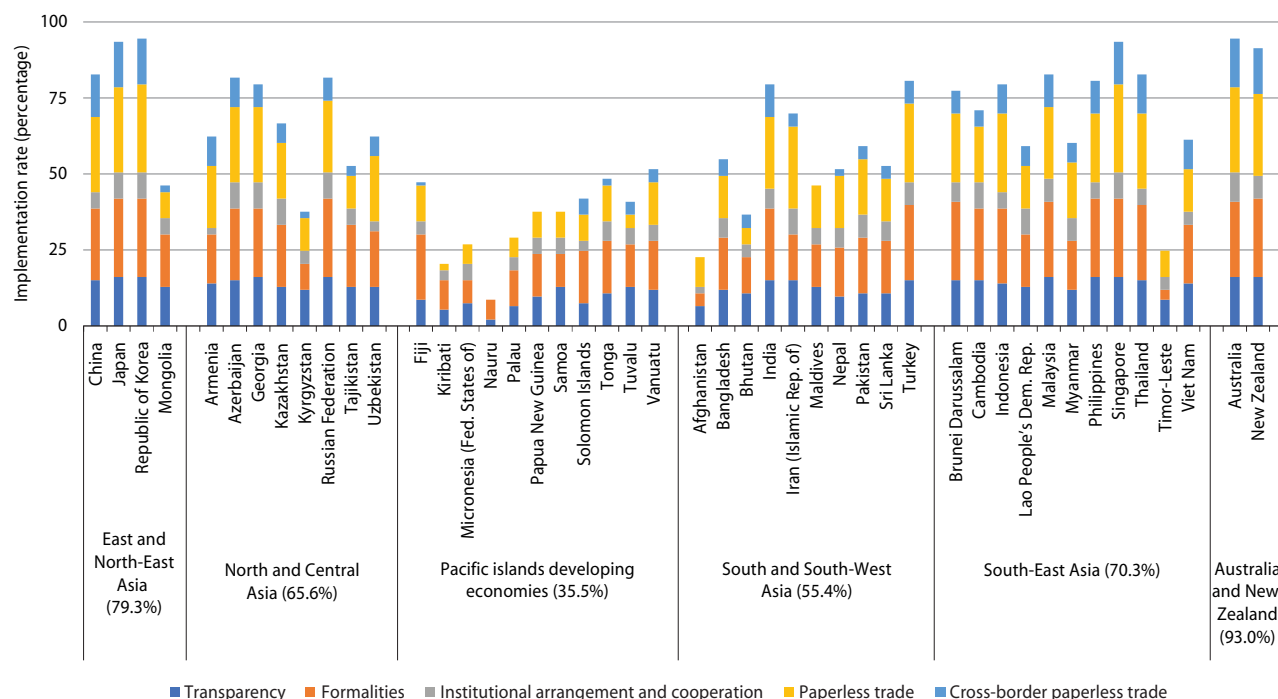
<sup>3</sup> A joint effort by WTO, the International Trade Centre and the United Nations that sends notifications of newly-initiated SPS or TBT measures to subscribers when their product/and or country of interest is affected [www.epingalert.org/](http://www.epingalert.org/).

<sup>4</sup> The European Union has also put in place minimum standards for stakeholder consultation (e.g., see [https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/better-regulation-why-and-how/better-regulation-guidelines-and-toolbox\\_en](https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/better-regulation-why-and-how/better-regulation-guidelines-and-toolbox_en)), and facilitates online feedback for European Union citizens and other stakeholders at various stages of a law or regulation development process (e.g., see <https://ec.europa.eu/info/law/better-regulation/have-your-say>).

<sup>5</sup> See <https://untfsurvey.org/>.



Implementation of trade facilitation and paperless trade in Asia and the Pacific



Sources: ESCAP (2019) and United Nations (2019); <https://untfsurvey.org>.

## 1. Enhancing transparency of NTMs and related procedures

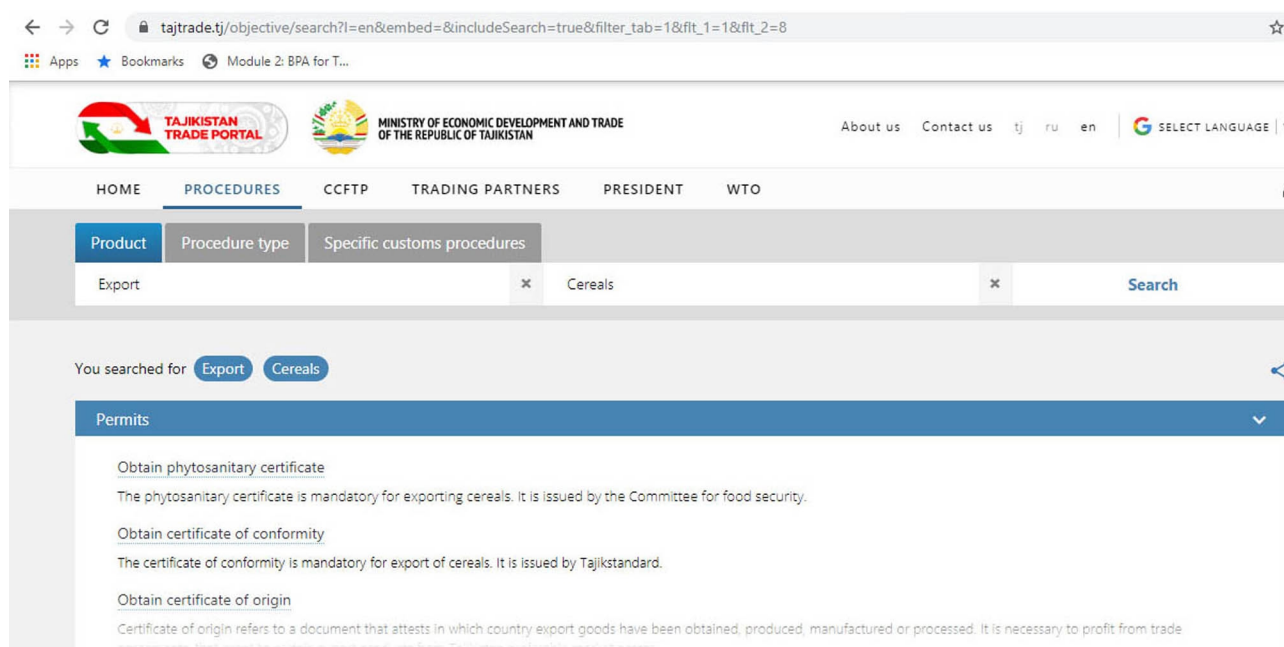
*“NTMs and related procedures should be made available online, ideally through a national trade portal or repository providing comprehensive one-stop access to all relevant trade regulations.”*

Enhancing transparency in NTMs and related procedures can go a long way towards reducing the costs associated with them. This may be done as part of implementation of transparency provisions under trade agreements including the WTO TFA, or the establishment of national trade portals, providing access to all trade-related laws, regulations and procedures in one place. The global initiative to map all NTMs, coordinated and supported by UNCTAD and ESCAP ([trains.unctad.org](https://trains.unctad.org)), enhances transparency in trade regulations. Greater transparency can help reduce adverse effects on women producers and traders, small and medium-sized enterprises (SMEs) and other disadvantaged groups, while also expanding new trading opportunities.

For example, as part of the Association of Southeast Asian Nations (ASEAN)-wide initiative discussed later in this chapter, South-East Asian countries have already established National Trade Repositories (NTRs) linked to national NTM databases (Asian Trade Centre, 2019). Several other developing countries have also taken steps to establish such portals. Tajikistan, for example, recently launched its portal with the technical assistance of UNCTAD and the International Trade Centre. The portal is maintained by the Ministry of Economic Development of Trade and is designed in a pragmatic way, with the trader in mind. As such, the search for a procedure is based on specifying intent (import, export or transit) and the type of product (from a list of about 50 products) (figure 4.2). A review of portals across the region reveals that their design and the information they cover vary widely across countries. Responsible agencies should review them to ensure they include relevant and up-to-date information on NTMs and related procedures – and that the contact and enquiry points listed are responsive to requests for information.



Online user interface of the Tajikistan Trade Portal



The development of national trade portals may be done in collaboration with other trade partners. In fact, enhancing transparency may be easier when done as part of implementation of a regional trade agreement, as happened with the Pacific Agreement on Closer Economic Relations (PACER) Plus, for example. Enhanced transparency serves as a driver for reform and streamlining as well as a tool for capacity-building. Building trade portals in the PACER Plus Pacific island countries made government officials stocktake and review their trade regulations and procedures.<sup>6</sup> In addition, it supports government officials to implement NTMs based on the rules – thus, they can reduce the gap between what is stipulated in regulations and what is practiced in reality. Finally, it facilitates private sector engagement in NTM streamlining, as traders or their representatives can easily find and reference the relevant regulations for discussions with regulatory authorities.

## 2. Accelerating digitalization of trade procedures

Complying with NTMs typically requires exchange of information between traders and trade control

agencies, both within and across borders. Moving to web-based applications and exchanges of information is expected to ultimately reduce trade costs by 25% on average in the region, generating savings, both for Governments and traders, that could exceed \$600 billion annually (ESCAP, 2017).

Among other developing regions globally, East and South-East Asia economies have made the most progress in this area. A good example of expanding trade digitalization is found in Thailand, where 26 trade control agencies have completed data linkage for all types of goods and customs information and formalities, increasing both speed and accuracy of information exchange (United Nations, 2019). In Malaysia, the Electronic Preferential Certificate of Origin system provides additional functions for users, including analytics and online inquiries. In a significant step towards e-payment of duties and fees, China has developed a new-generation online payment system for systematic networking involving customs, the state treasury and commercial banks. Singapore has recently launched its Networked Trade Platform, a “next-generation” trade information management platform incorporating national trade

<sup>6</sup> See <https://pacific.tradeportal.org/>.

regulatory single window services, and providing for both business-to-government (B2G) and government-to-government (G2G) connectivity.<sup>7</sup>

*“Digitalization of NTM-related procedures, such as by issuing and exchanging certificates of origin electronically, could significantly reduce compliance costs.”*

Good practices are also apparent in cross-border paperless trade as related to laws and regulations.

In the area of paperless SPS certificate exchange, China and the Netherlands can now issue health certificates electronically and have achieved full paperless exchange for dairy products. While initiatives for exchanging electronic SPS certificates remain mostly bilateral and at the pilot stage, the International Plant Protection Convention (IPPC) has developed an interesting initiative, enabling countries with limited paperless trade capabilities in issuing SPS certificates electronically, to exchange them with other participating countries through a hub (see box 4.1).



#### Streamlining SPS procedures: the IPPC ePhyto Solution

Since 2011, the Commission on Phytosanitary Measures (CPM) has encouraged the advancement of electronic certification, which resulted in the development of ePhyto (electronic phytosanitary certificate). The project was developed with, and is financed by, the Standards and Trade Development Facility (STDF), which has more generally drawn attention to SPS e-certification in the broader context of paperless trade (STDF, 2019b). An ePhyto is the electronic version of a phytosanitary certificate in XML format. All the information contained in a paper phytosanitary certificate is also in the ePhyto. ePhytos can be exchanged electronically between countries or the data printed out on paper.

The IPPC ePhyto Solution consists of three main elements aimed at supporting the exchange of ePhytos between National Plant Protection Organizations (NPPOs):

- A central server (Hub): To facilitate the transfer of electronic phytosanitary certificates between NPPOs, either from or to their own national electronic system, or by using the generic system described below;
- Generic ePhyto National System (GeNS): A web-based system that can produce and receive ePhytos to allow countries that do not have a national electronic system to produce, send and receive ePhytos;
- Harmonization: the structure and transmission of ePhytos will follow a harmonized format through the use of standardized mapping, codes and lists.

IPPC ePhyto is the type of paperless solution that, combined with national and regional electronic trade single windows and other facilities, could help the Asia-Pacific region reduce trade costs by up to 25% on average. STDF is also funding a similar but separate initiative addressing electronic veterinary certificates (eVet) involving OIE and a range of other partners (STDF, 2018). However, fully achieving cross-border paperless trade will require more intergovernmental cooperation to address and integrate a wider range of trade documents and procedures. The Framework Agreement on Facilitation of Cross-border Paperless Trade Facilitation in Asia and the Pacific may be particularly useful in this regard.

Sources: [www.ippc.int/en/ephyto/](http://www.ippc.int/en/ephyto/); and ESCAP (2017); STDF (2019c).



<sup>7</sup> See [www.ntp.gov.sg](http://www.ntp.gov.sg).

### 3. Inclusive trade facilitation measures

As discussed in chapter 1, NTMs have an important role in helping to achieve SDGs. To maximize the sustainable benefits of NTMs, it is important that trade facilitation measures and efforts put in place benefit not only larger traders, but also groups and sectors that tend to be excluded or disadvantaged. The United Nations Global Digital and Sustainable Trade Facilitation Survey (United Nations, 2019) found that measures aimed at the food and agricultural sector are relatively well implemented, but that trade facilitation measures targeted at SMEs and women remain rare (ESCAP, 2019).

*“Trade facilitation measures should be inclusive, including ensuring SMEs can benefit from Authorized Economic Operator schemes and that female traders have a say in trade facilitation reforms.”*

Trade facilitation for SMEs is an extensive but fundamental area where the Asia-Pacific region has been developing and implementing a number of best practices. Viet Nam has been working closely with international partners by setting up an SME Partnership Group to support donor-government collaboration and consultation in formulating SME policies and regulations. Expedited Authorized Economic Operator (AEO) examinations are offered to SMEs in the Republic of Korea through multiple procedural preferential provisions, including a priority audit, with consultation fees available to firms demonstrating lack of personnel and financial resources. In addition, to reduce logistics costs of SMEs in the Republic of Korea, the Korean International Trade Association has established a rate discount and consulting service in conjunction with 22 logistics firms. A document service centre has been established in Singapore to help SMEs access its single window more easily and to submit documents on their behalf. ESCAP, ITC and UNNExT provide guidance and a regulatory review checklist for small business trade facilitation.<sup>8</sup>

In the area of agricultural trade facilitation, China's E-Cert system is open to all authorities of trading partners for verification of SPS certificates issued by local China inspections and quarantine authorities. In addition, it has built cold storage centres near the Khunjerab Pass along the China-Pakistan Economic Corridor, which help manage seafood imports to the Xinjiang region. The European Union-China Smart and Secure Trade Lanes pilot project (which facilitates customs-to-customs data exchange) is also expected to boost agricultural trade facilitation.

Good practices to enhance the role of women in trade facilitation have also been spreading. The Australian Trade Commission has established the Women in Global Business Programme to increase their participation in international trade and investment, delivering economic benefits and job creation with expanded diversity. In Malaysia, the National Trade Facilitation Cluster Working Group has already achieved equal gender representation. Capacity development experience in the region – such as the United Nations Economic Commission for Europe (UNECE) Workshop on Cross-Border Trade of Nuts and Dried Fruit that focused on quality, food safety, businesses processes and potential markets – reported that women participants outnumbered men, indicating that gender balance participation in capacity-building activities is attainable.<sup>9</sup>

### 4. Broad trade facilitation: addressing quality infrastructure gaps for NTMs

*“Increasing availability of quality infrastructure, supported by mutual recognition of standards and accreditation, can reduce trade costs and duplication of compliance efforts.”*

Effectively addressing procedural obstacles for NTMs will require a broader approach to trade facilitation than simply implementing border measures under the WTO TFA. The lack of quality infrastructure (e.g.,

<sup>8</sup> See ESCAP and ITC (2016).

<sup>9</sup> UNCTAD has produced an informative guide for exporting products produced by women in nine Pacific island countries to Australia and New Zealand markets, which significantly raises regulatory transparency (UNCTAD, 2019a). Similarly, the transparency provisions in the PACER Plus Agreement are expected to have significant gender implications in services, tourism, agriculture and fisheries as well as SMEs, as the provisions ease some of the difficulties faced by female producers and traders, but will require greater capacity-building and assistance for data collection and analysis (UNCTAD, 2019b).

domestic SPS testing labs and an accreditation system for such laboratories)<sup>10</sup> is frequently cited as one of the greatest difficulties faced by exporters, particularly agricultural exporters. For example, some agricultural goods from Myanmar that are bound for Mae Sot District in Tak Province (Thailand border province next to Myanmar) have to first be tested in Chiang Mai Province (more than 350 km away), before being shipped back to Mae Sot. At the same time, in some cases there may not be sufficient demand to warrant a “national lab”, and sending samples abroad could remain the least costly option. As such, a lab assessment is often a useful first step.

In many countries, significant consolidation of lab activities may have to take place, i.e. aiming for one “state-of-the-art” central lab, while at borders all that may be needed is basic equipment to carry out some rapid tests.

A diagnostic study on SPS measures affecting exports from Nepal, also recommends establishment and upgrade of testing laboratory (see box 4.2). Providing and maintaining some of that infrastructure and to develop better (sub)regional infrastructure can benefit from the information exchange and economies of scale that arise through regional cooperation efforts.



#### NTMs and Nepal's efforts to diversify export markets

A recent national diagnostic study (ADB and SASEC, 2019) focusing on SPS measures affecting exports from Nepal indicates how more and better information and analysis in the context of a regional free trade agreement (FTA) can be applied to streamline or reduce NTMs. While Nepal trades extensively with India, its exports to other South Asia Subregional Economic Cooperation (SASEC) markets have been negligible, declining or stagnant, and limited to only a few products.

Focusing on products and markets that Nepal data indicate could be expected to have greater intra-SASEC exports, the study applied a gap analysis complemented by surveys of exporters and commodity association representatives for a wide range of products. The objective was to identify institutional deficiencies, infrastructural constraints and procedural obstacles related to SPS measures and TBTs in Nepal. Gaps in relevant standards and divergence from international best practices (such as limits on traceability, inadequate risk analysis and critical control points, rudimentary packaging and labelling rules, and lack of regulations regarding dangerous substances) highlighted areas for institutional improvement. Insufficient or inadequate testing and calibration laboratories with a lack of accreditation, and operating under outdated legislation with limited human resources have also constrained the country's trade performance.

To complement the Nepalese picture, the study also examined SPS- and TBT-related obstacles in the other SASEC markets for potential exports by Nepal. Inconsistent classification of products, extremely strict testing requirements, arbitrary behaviour and informal payments were found to limit exports to India, Sri Lanka and Bangladesh. Constraints on exports to Bhutan and Maldives were not identified, primarily due to lack of information and insignificant trade quantities.

Domestic recommendations that emerged from the study are to: (a) establish and upgrade testing and calibration laboratories and a national accreditation body; (b) approve new legislation more quickly; (c) develop a more skilled workforce; and (d) share more information on SASEC markets with Nepalese traders. Within SASEC, benefits could be extended by harmonizing standards and establishing mutual recognition arrangements for major perishable items.

Source: ADB and SASEC (2019).

<sup>10</sup> Note that quality infrastructure could also include mutual recognition arrangements (MRAs) between countries to facilitate assessment and acceptance of conforming standards, procedures and accreditations as well as physical and other institutional infrastructure. MRAs may also apply to human qualifications such as university degrees or technical credentials, which are particularly important for trade in services. Compliance of products with the standards of importing countries are assessed by recognized conformity assessment bodies (CABs). The lack of access to such a body may render any MRA ineffective in practice (Jusoh, 2017).

## C. REGIONAL EFFORTS TO COORDINATE AND STREAMLINE NON-TARIFF MEASURES CAN ACCOMPLISH MORE

International efforts to reduce technical barriers and enhance market access through improving conformity to standards are long-standing in the region. Examples include the Asia-Pacific Economic Cooperation (APEC) Subcommittee on Standards and Conformance, participation by Asia-Pacific economies in the WTO SPS and TBT Committees, the ASEAN and Eurasian Economic Union (EAEU) experiences with integration as well as a multitude of other regional trade agreements that include efforts to address NTMs (Trivedi and others, 2019). Such efforts have made substantial progress, but still leave room for improvement in both targeting and implementation. This section discusses how regional economies are increasingly addressing NTMs through trade agreements, as indicated by the growth of provisions on NTMs in agreements signed in recent years, and provides case study examples of addressing NTMs through deeper levels of integration.

### 1. NTM provisions in regional trade agreements

Aside from gaps in hard infrastructure, significant gaps exist among subregions in Asia and the Pacific in the cross-border soft infrastructure of trade agreements, hindering both trade facilitation and regional integration. Figure 4.3 summarizes the bilateral relationships between Asia-Pacific economies, highlighting whether they are linked by at least one trade agreement already in force (■), under negotiation (▲), or signed and pending ratification (●). Individual subregions tend to be densely covered at times by overlapping trade agreements, whereas more diverse multimember intraregional agreements are rarer. The Pacific economies in particular – apart from the developed economies of Australia and New Zealand – have no trade agreements with other Asia-Pacific subregions. To a lesser extent, the North and Central Asia subregion also demonstrates a lower incidence of intraregional agreements.

The lack of trade agreements can manifest itself, in part, through higher trade costs and relatively low trade volumes. While economies with less trade are less likely to seek trade agreements, the lack of trade

agreements itself can contribute to higher trade costs (tariff and non-tariff) that are, in turn, reflected in lower trade flows. Furthermore, close geographical proximity and formal trade agreements are no guarantee of a lower impact of trade restrictive NTMs and associated procedural obstacles.

An analysis of FTAs gives an idea of what countries/groups of countries are trying to do to alleviate negative impacts of NTMs. Trivedi and others (2019) examine provisions related to TBTs, SPS and government procurement practices in FTAs during the 10-year period from 2009 to 2018. It covers 58 regional trade agreements (RTAs), which are all the RTAs signed by at least one economy in Asia and the Pacific and/or in force in that period.

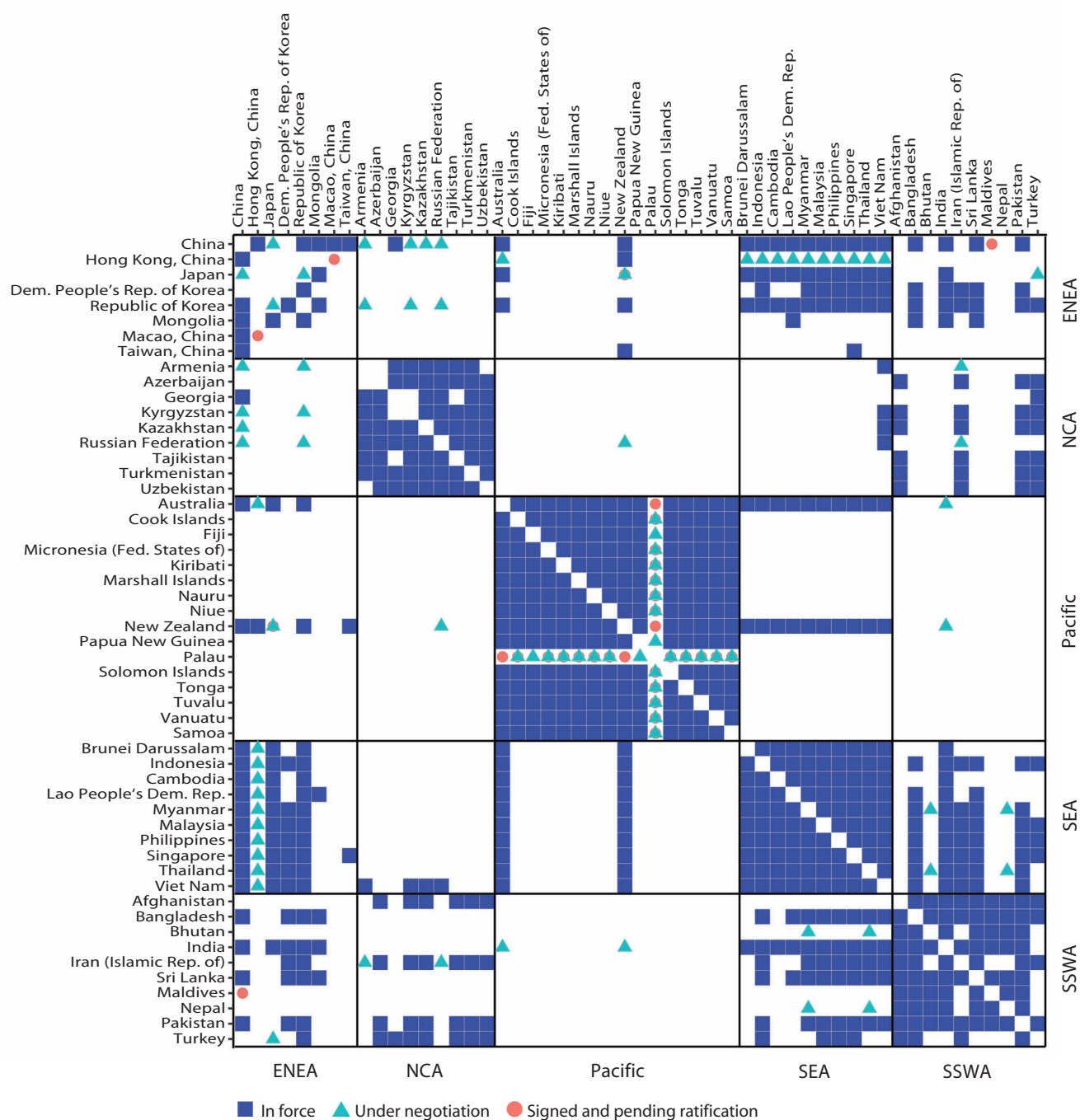
Significantly, reducing the negative impacts of NTMs is increasingly being pursued in a new generation of trade agreements. Agreements signed in the past four years included substantially more provisions on NTMs than those signed before 2014, indicating that economies are increasingly addressing NTMs through trade agreements (figure 4.4).

All, or almost all, of the RTAs examined contain a reference to the WTO TBT Agreement, and provisions on information exchange and cooperation, conformity assessment and mutual recognition of conformity assessment. Provisions on assigning contact points, establishing a TBT Committee, and using international standards are also common. While TBT provisions on dispute settlement and harmonization with international standards are less common, they become increasingly more common by the second half of the 10-year period (figure 4.5).

Similarly, all 58 agreements recognize the importance of SPS measures and promote actions in accordance with the WTO SPS Agreement as well as information exchange and cooperation, and assigning competent authorities and contact points (figure 4.6). Subjects deserving greater attention in SPS discussions include provisions on risk analysis and taking emergency measures. These would support achievement of SDGs, particularly through their protection of human, plant and animal life. As with TBT Chapters, greater efforts to promote harmonization with international standards would help to streamline NTMs and reduce processing obstacles.

**Figure**  
**4.3**

**Bilateral matrix of economies covered by trade agreement relationships**

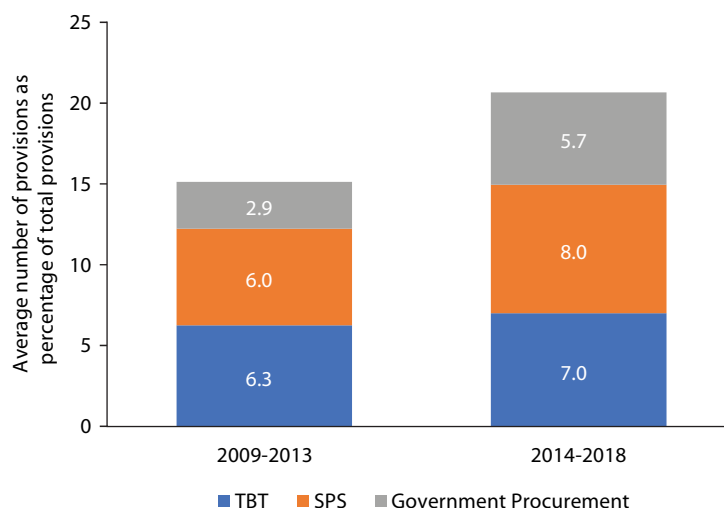


Source: <https://artnet.unescap.org/databases/aptiad-noodlebowl>.

Notes: ENEA – East and North-East Asia; NCA – North and Central Asia; SEA – South-East Asia; and SSWA – South and South-West Asia.



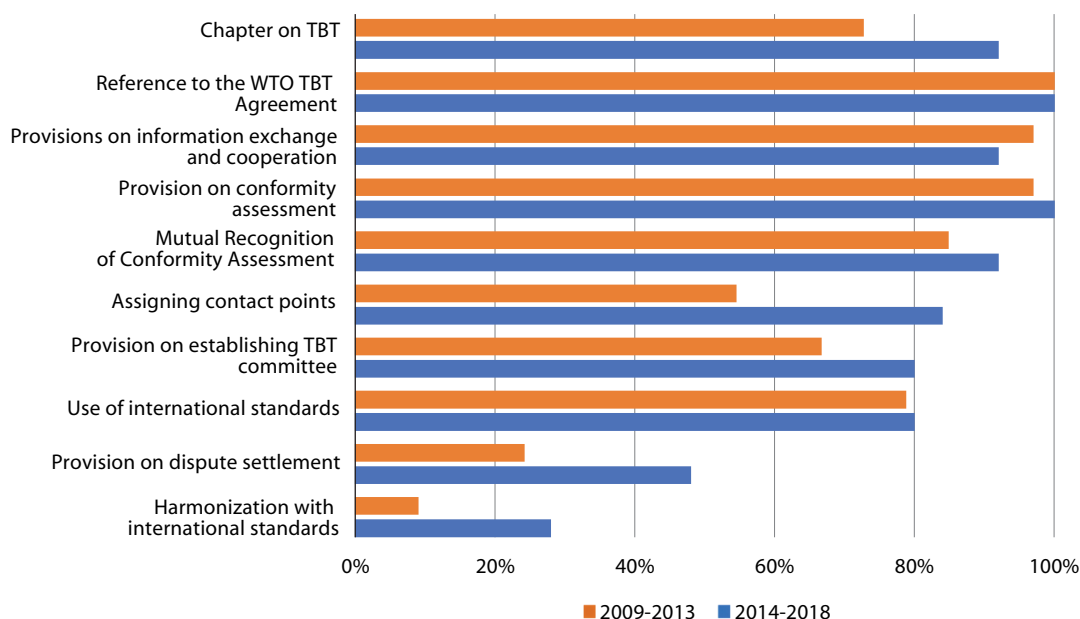
**Average number of provisions on NTMs in RTAs in Asia and the Pacific, 2009-2018**



Source: ESCAP calculations, see Trivedi and others (2019).



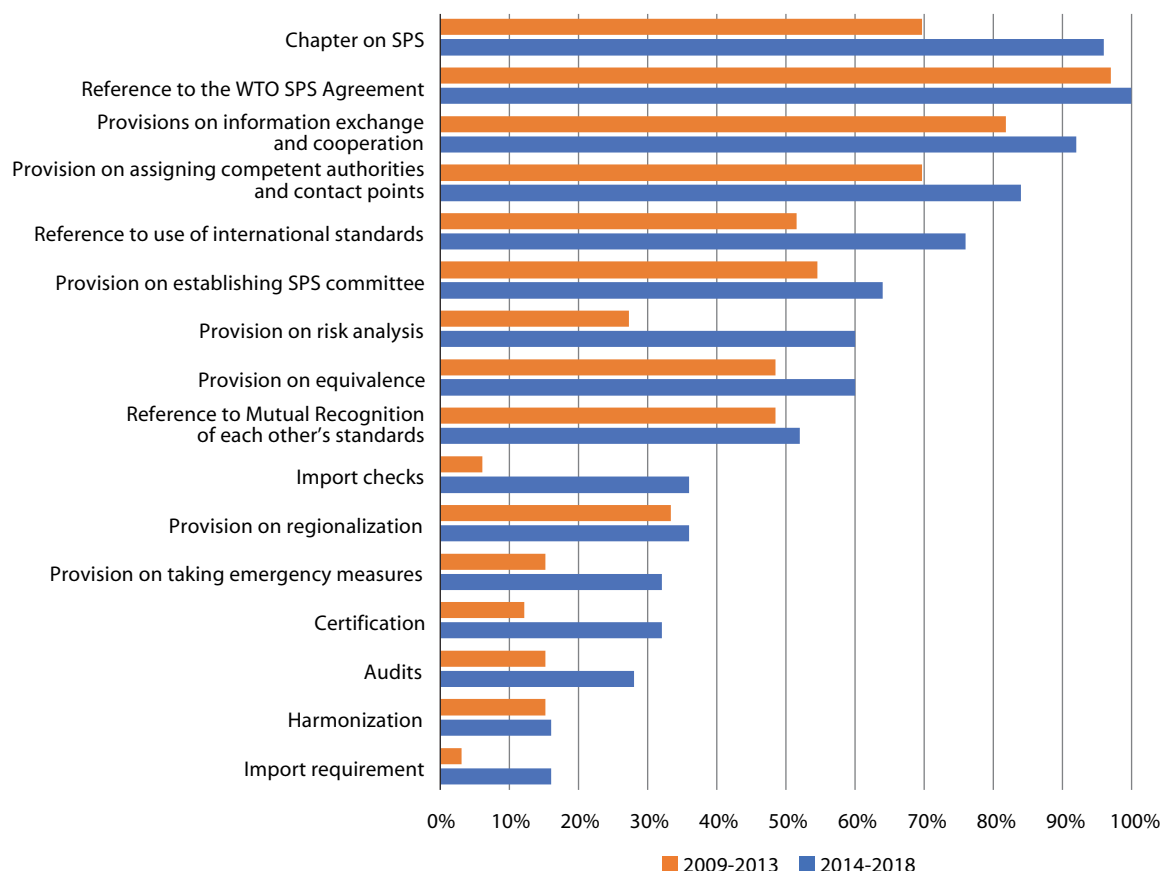
**TBT provisions in RTAs in Asia and the Pacific**



Source: ESCAP calculations, see Trivedi and others (2019).



SPS provisions in RTAs in Asia and the Pacific



Source: ESCAP calculations, see Trivedi and others (2019).

*“Contingency-related measures that may take effect following risk analysis or in response to emergencies should be considered as integral parts of FTAs.”*

Government procurement provisions are less common in RTAs (figure 4.7). Twenty-one of the 58 agreements analysed do not contain any mention of government procurement, although there has been a noticeable increase in its presence in recent years. The Comprehensive and Progressive Trans-Pacific Partnership (CPTPP) Agreement is the most extensive in its coverage, containing provisions on conditions for participation by suppliers, qualification of suppliers, technical specification on conformity assessment procedures, documentation of tender,

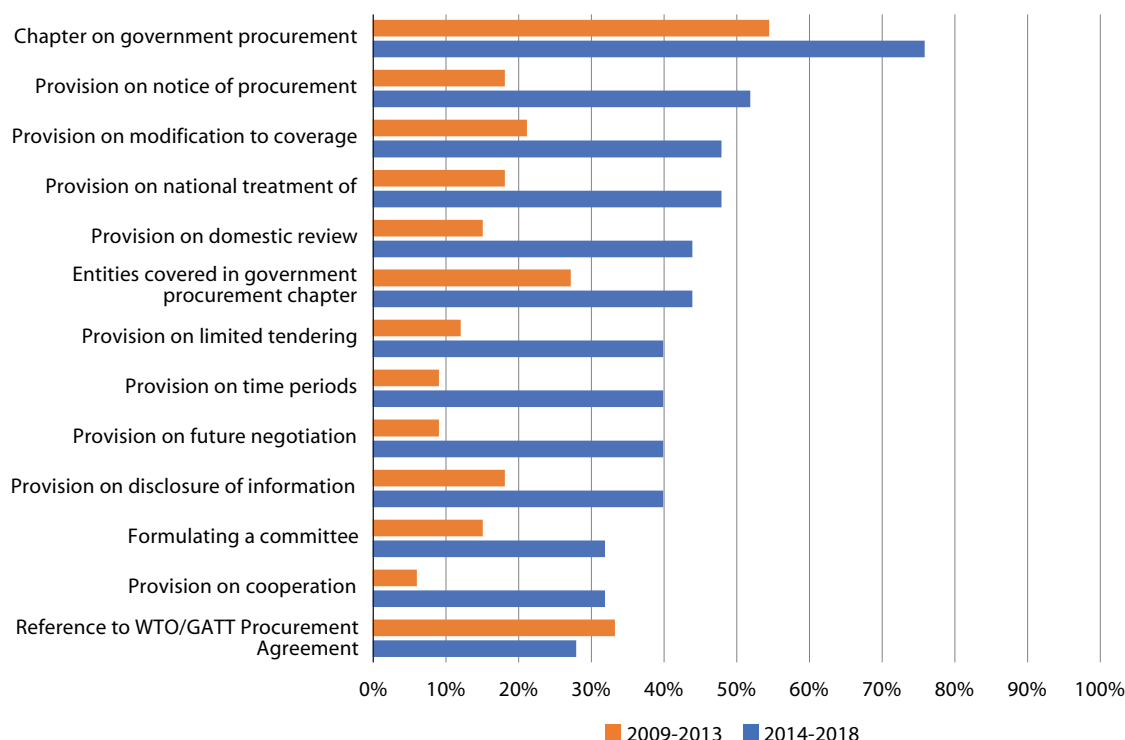
post award notification and facilitation of participation by SMEs. In general, provisions on cooperation and government procurement committees need greater attention in government procurement discussions for trade agreements.

Overall, the CPTPP Agreement is the most comprehensive Asia-Pacific agreement in terms of provisions on technical barriers to trade and government procurement. The Singapore-European Union and Singapore-Sri Lanka Free Trade Agreements, the Pacific Agreement on Closer Economic Relations Plus, and the CPTPP Agreement have more extensive provisions related to SPS measures than other agreements that are in place.<sup>11</sup> While many of the provisions on NTMs in most

<sup>11</sup> The PACER Plus Agreement only obliges the participating non-WTO member countries to fulfil SPS commitments to the extent possible. For these countries, the scope is rather WTO minus.



**Government procurement provisions in RTAs in Asia and the Pacific**



Source: ESCAP calculations, see Trivedi and others (2019).

agreements remain rather generic, a more detailed review of those found in the most comprehensive agreements identified here may provide useful guidance on how to further streamline NTMs in the Asia-Pacific region.

The average number of provisions of NTMs is greatest in trade agreements between two high-income countries while their occurrence tends to fall with income levels. However, average number of provisions on technical barriers to trade and government procurement are highest in agreements between higher-income economies, while the number of provisions on SPS measures are higher in agreements between higher income and lower

income economies. This suggests that the growth and development process itself, in which countries' comparative advantage changes over time as their incomes rise, can be expected to influence the evolution of NTMs, their impacts and their success in achieving SDGs in coming years. Overall, it is safe to assume that future RTAs will continue the trend of addressing NTMs; as such, it is important to ensure that best practices, based on what has worked or has not, are employed during the negotiations (see box 4.3).

*“RTAs can help to reduce protectionism and compliance costs while facilitating transparency and adoption of international standards.”*



### Best practices for addressing NTMs through RTAs

Stoler (2011) analysed SPS and TBT provisions in various RTAs around the world. Looking at RTAs that included the European Union, he noted that provisions often required for the partner countries to harmonize their SPS and TBT regulations with those of the European Union. On the other hand, RTAs involving Asia-Pacific economies or the United States typically address NTMs through provisions on using international standards or through the use of mutual recognition arrangements. The author noted that both approaches may leave some developing countries behind, as they often have no capacity and resources to employ either approach. The study concluded with the following best practices to address SPS and TBT issues in RTAs:

- Use international standards whenever possible;
- If the harmonization approach of standards and conformity assessment procedures is taken, it should be limited only to essential health and safety standards, with the rest being under mutual recognition and equivalence arrangements;
- Technical assistance and capacity-building should be provided for less developed partners of RTA;
- For non-harmonized regulations, multiple or duplicate measures or mandatory tests for the same product should be removed;
- SPS standards should be transparent;
- The agreement should be “live”, and include a work plan on dispute resolution, harmonization, mutual recognition, equivalence measures, etc;
- RTA provisions on technical regulations should be legally binding;
- RTA members must agree for technical regulations and conformity assessment procedures to be always applied on a national treatment basis.

Source: Stoler (2011).

## 2. Other regional mechanisms and initiatives for NTMs

An RTA is not a precursor for bilateral or plurilateral cooperation on addressing NTMs. For example, while there is no FTA between New Zealand and the European Union (one is being negotiated), both economies enjoy a Mutual Recognition Agreement in sectors such as medical devices and automotive products. At the same time, an RTA does help, sometimes leading to deeper cooperation in addressing NTMs, as illustrated by examples from ASEAN and the Eurasian Economic Union (EAEU).

### (a) ASEAN initiatives

ASEAN economies have long recognized the need to streamline NTMs as part their pursuit of a more

integrated ASEAN Economic Community (AEC). The ASEAN Trade in Goods Agreement (ATIGA) signed in 2009 includes a chapter dedicated to NTMs (Chapter 4), as well as another dedicated to trade facilitation (Chapter 5). The AEC Blueprint 2025 provides a guide to member states towards the next level of ASEAN integration and includes a list of strategic measures to be implemented in 2016-2025. As detailed in box 4.4, reducing the cost of NTMs is a core component of ASEAN trade facilitation strategy in the Blueprint. The strategy also includes cooperation on the effective operationalization of the National and ASEAN Trade Repositories for enhanced regulatory transparency and certainty for the private sector in the region. Indeed, an important starting point in reducing the costs of NTMs is to make related regulations and measures easily accessible to all.



### Streamlining NTMs in the ASEAN Economic Community Blueprint 2025

The AEC Blueprint 2025 emphasizes issues and actions related to NTMs. Trade is seen as an essential means of achieving a highly integrated and cohesive ASEAN economy, starting with trade in goods. Streamlining NTMs is an integral part of the push by ASEAN economies for implementation of trade facilitation measures. The Blueprint identifies “Accelerate and deepen the implementation of trade facilitation measures” as one of three strategic measures under “trade in goods”, as follows:

“Accelerate and deepen the implementation of trade facilitation measures – ASEAN played a leading role in the conclusion of the World Trade Organization (WTO) Agreement on Trade Facilitation (ATF) in 2013. Beyond ensuring the smooth implementation of the ATF in ASEAN Member States, ASEAN aims towards convergence in trade facilitation regimes among ASEAN Member States and to move closer to global best practices. The ASEAN Trade Facilitation-Joint Consultative Committee (ATF-JCC) comprising representatives from the public and private sectors has been established to accelerate work on trade facilitation and ensure expeditious movement of goods within the region. Among the key measures are the following:

- a. Complete measures initiated under the AEC Blueprint 2015;
- b. Fully roll-out the National Single Windows in all ASEAN Member States, and widen the scope of the ASEAN Single Window project to include more documents and stakeholders in all ASEAN Member States;
- c. Cooperate on the effective operationalisation of the National and ASEAN Trade Repositories for enhanced regulatory transparency and certainty for the private sector in the region;
- d. Streamline and simplify administrative regulatory regimes, documentary requirements, as well as import and export procedures, including customs procedures;
- e. Deepen regional implementation of trade-facilitative ASEAN initiatives such as Authorized Economic Operators (AEO) programme and Self-Certification programme;
- f. Strengthen public-private sector cooperation, collaboration, and partnership in improving the process, institutional and infrastructural foundations of efficient and effective trade facilitation within the region;
- g. Minimise trade protection and compliance costs in dealing with Non-Tariff Measures (NTMs).

Most NTMs address regulatory objectives such as environmental, health and safety, security or cultural considerations, but they can also significantly impede trade inadvertently or by design. Addressing NTMs involves the following: (i) accelerating work towards full elimination of nontariff barriers; (ii) standards and conformance measures, e.g. equivalence in technical regulations, standards harmonization, alignment with international standards and mutual recognition arrangements (MRAs); and (iii) streamlining procedures and reducing requirements for certificates, permits and licenses to import or export.

Measures that give rise to a trade facilitative regime in ASEAN include the following:

1. Explore imposing stringent criteria and sunset clause on trade-protective NTMs such as quotas and other quantity restrictions in imports and exports;
  2. Embed good regulatory practice (GRP) in implementing domestic regulations and practices and thereby minimize compliance cost of meeting NTM requirements;
  3. Strengthen coordination with the private sector in determining, prioritising and minimising the unnecessary regulatory burden of NTMs on the private sector; and
  4. Explore alternative ways to addressing NTMs such as sectoral or value chain approaches to deal with NTMs.
- h. Work towards facilitative standards and conformance. This involves accelerated implementation of harmonisation of standards and technical regulations, improvement of quality and capability of conformity assessment, enhanced information exchange on laws, rules, and regulatory regimes on standards and



(continued)

conformity assessment procedures. This also involves regional cooperation and agreement on measures to facilitate MSME upgrading towards regionally and/or internationally agreed standards to facilitate exports. Relevant measures include the following:

1. Complete and deepen initiatives begun under the AEC Blueprint 2025;
2. Undertake concerted regional and national programmes to upgrade the technical capacity and physical infrastructure for effective and efficient conformity assessment regime in the region;
3. Establish effective measures for transparency and communication on country-specific requirements;
4. Expand coverage of sectors under standards and conformance beyond the priority integration sectors;
5. Embed GRP in the preparation, adoption, and implementation of standards and conformance rules, regulations, and procedures;
6. Strengthen public-private partnership and enhance contribution of the private sector in designing, monitoring, reviewing, and updating of standards and conformance regime in the region; and
7. Strengthen cooperation with Dialogue Partners in the implementation of technical barriers to trade (TBT) Chapters of ASEAN+1 FTAs, and future economic partnership and free trade agreements.”

#### (b) EAEU initiatives

Article 46 on NTMs of the Eurasian Economic Union Agreement, 2014, notes that member States of the Union shall use of the same NTMs in:

- Import or export bans;
- Import or export quantitative restrictions;
- Exclusive rights to import or export goods;
- Automatic licensing of export and import of goods;
- Permit procedure for the import and export of goods.

In addition, the Article stipulates that NTMs are to be introduced and applied on the basis of the principles of transparency and non-discrimination. SPS and TBT provisions are covered by separate Sections (Section X on technical regulations (meaning TBT), and Section XI on SPS measures). Since coming into effect in 2015, new SPS and TBT measures notified to WTO by the WTO members of the Union are all based on EAEU regulations. Notably, the development of these measures requires consensus by all EAEU member States, highlighting the advantages of

coordinated policymaking provided by a deep level of integration.

The EAEU Agreement does not preclude members from imposing temporary measures for SPS reasons (or, indeed for other reasons, such as cultural, moral or national security). As noted previously, these may sometimes appear as discriminatory measures to some traders – there is room for interpretation on what is necessary/trade restrictive or not – and as such, conflicts arise. The Eurasian Economic Commission works as a moderator between relevant government bodies and complainants (typically the private sector) of member States. Their web portal<sup>12</sup> provides a functionality to report a potential obstacle to ensuring a single internal market of the EAEU member States (see box 4.5 for a similar example from Africa). As of August 2019, 71 such obstacles were identified in total, with 14 removed/addressed. A parallel can be drawn with the WTO SPS and TBT Committees and Specific Trade Concerns notification, with the EAEU Secretariat providing intra-EAEU moderation of disputes arising from one party claiming that a legislation is in violation of the EAEU Agreement.

<sup>12</sup> <https://barriers.eaeunion.org/>.

**Box  
4.5**

**TradeBarriers.org – a Tripartite Free Trade Area initiative (Africa)**



Member States of the Tripartite Community<sup>a</sup> prioritize addressing NTBs, identified as one of the main reasons for high interregional trade costs since many tariffs have been successfully removed. The Secretariats of the three regional economic communities established monitoring, reporting and elimination of NTMs mechanisms, with concrete timelines for the removal of identified NTBs. To facilitate these actions, a reporting mechanism includes both an online portal at [www.tradebarriers.org](http://www.tradebarriers.org), where complaints can be submitted by traders encountering issues, and dedicated phone numbers for sending complaints via SMS messages in each country. As of August

2019, more than 600 complaints have been resolved and 50 remain open. A succinct example of a resolved NTB complaint is presented below:

|                                              |                                                                                                                                                                   |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issues related to the rules of origin</b> |                                                                                                                                                                   |
| <b>Complaint</b>                             | Denial of market access to sunflower oil.                                                                                                                         |
| <b>Resolution status note:</b>               | During the 27 <sup>th</sup> Regional Monitoring, Uganda reported that Tanzania accorded Uganda sunflower originating status therefore this NTB had been resolved. |

Source: [tradebarriers.org](http://tradebarriers.org).

<sup>a</sup> Common Market for Eastern and Southern Africa (COMESA), East African Community (EAC) and Southern African Development Community (SADC).

## D. LOOKING FORWARD AND EMERGING ISSUES

This chapter has focused on good practices to streamline procedures associated with the implementation of NTMs. It also reviewed some national, subregional and regional initiatives on addressing NTMs and identified opportunities for enhanced regional cooperation. The chapter also highlighted the need for regional quality infrastructure development, and transparency and capacity development as well as the importance of enhanced digital trade facilitation implementation to drive down costs associated with NTMs. This final section outlines future considerations related to NTMs and their impact on sustainable development.

### 1. International standards

As per the findings in chapter 3, the potential of international standards to overcome costs related to the variance of national regulations has not been fully exploited. Countries conducting regulatory reforms or introducing new regulations to strengthen the protection of health, safety and the environment should make more use of international standards. The incentives to use international standards would be higher if there was leadership by the major trading countries. If the 5 to 20 of the largest traders would strengthen their regulatory cooperation and use or develop international standards, the incentive for all other countries to follow would be high.

*“International standards should be publicized to traders and their adoption encouraged, and areas for convergence identified and facilitated.”*

The international standards organizations may consider developing coherent types of regulations at different levels of protection. For this, it is important for developing countries to actively participate in the standard-setting process. Low-income countries require technical assistance to introduce and implement technical regulations. The analysis in chapter 3 has shown significant under-regulation in many countries. Developing the necessary quality infrastructure is important to adequately protect health, safety and the environment in those countries. Due to the significant increase in the number and strength of linkages to SDGs, it is a decisive moment.

## 2. Digital trade facilitation

Trade facilitation and process automation/digitalization remain extremely important to lower implementation costs of NTMs, together with addressing governance impediments.<sup>13</sup> Electronic single window facilities where all agencies come together, are particularly relevant in streamlining NTMs and the ability to reduce their burden.

Good progress has been made in trade facilitation implementation, particularly on the WTO TFA measures, and there has been acceleration of implementation in the Asia-Pacific region between 2015-2017 and 2017-2019. However, there is still potential to nearly double trade cost reductions from the WTO TFA implementation by fully digitalizing trade procedures (ADB and ESCAP, 2019). The implementation of cross-border paperless trade remains very challenging and more regional cooperation is needed including through the Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific.<sup>14</sup>

## 3. Trade in services

Trade in services now represents nearly a quarter of international trade in the region. Services are at the core of several SDGs, and are also important for goods trade, in particular the GVC-related trade, for example, ICTs, financial, transport and logistics services. Even more than trade in goods, trade in services is also affected by regulatory measures (see box 4.6). Services trade openness and services-dependent SDG indicators are positively correlated, suggesting that facilitating trade and investment in services supports sustainable development (Fiorini and Hoekman, 2018). Reducing NTMs affecting trade



### Restrictions in trade in services

In 2017, trade in services comprised 29% of total trade globally, and 23% in Asia and the Pacific. Like trade in goods, international trade in services is not immune to barriers, although the nature of barriers affecting trade in services can be different from those affecting trade in goods. When compared to trade in goods, one distinguishing feature of the trade in services is that it is predominantly affected by “behind the border” measures, which are not necessarily trade policies. Capturing this fact, the Services Trade Restrictiveness Index (STRI) of OECD evaluates five categories that hinder trade: (1) barriers to competition and public ownership; (2) regulatory transparency and administrative requirements; (3) restrictions on foreign ownership and other market entry conditions; (4) restrictions on the movement of people; and (5) other discriminatory measures and international standards. These categories are evaluated across 22 services sectors in 45 economies globally (10 of them in Asia and the Pacific). The STRI index is defined over 0 and 1, where 1 is most restrictive and 0 is least restrictive.

<sup>13</sup> For example, there are reports that some countries are facilitating border crossing but then asking for large penalty payments during the post-clearance audit process years later, with weak justifications. Companies are afraid of self-certification/declaration schemes because of what they might have to pay later on during unreliable audit processes.

<sup>14</sup> [www.unescap.org/resources/framework-agreement-facilitation-cross-border-paperless-trade-asia-and-pacific](http://www.unescap.org/resources/framework-agreement-facilitation-cross-border-paperless-trade-asia-and-pacific).

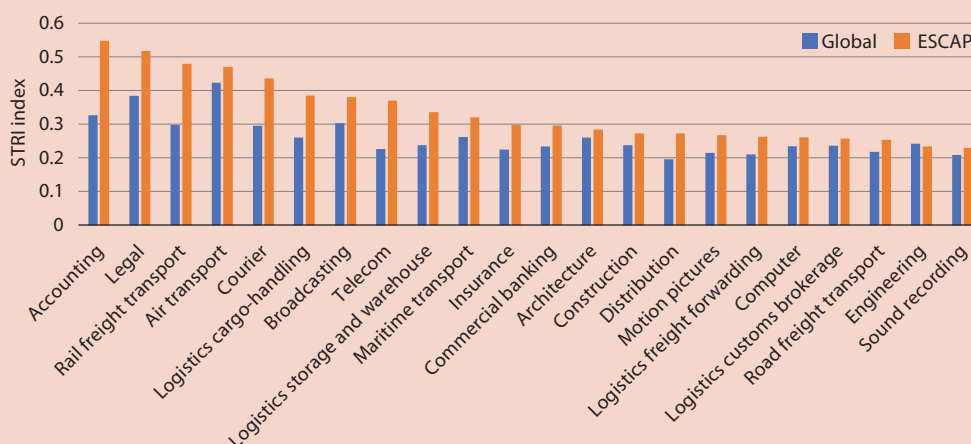


### Box 4.6

(continued)

The Asia and the Pacific region has an average 0.34 overall trade restrictiveness index score across all sectors (compared to 0.26 globally) and, in general, has higher trade restrictiveness in all sectors but engineering (figure A). This may, in part, explain why trade in services as a share of total trade lags behind the global average.

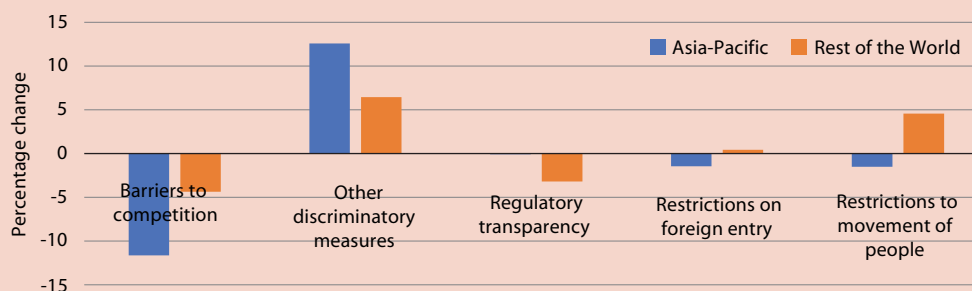
**Figure A. Services trade restrictiveness index in Asia and the Pacific and globally, 2018**



Source: ESCAP calculations based on the OECD Services Trade Restrictiveness Index dataset (accessed August 2019).

Encouragingly, on average since 2014, the STRI score in Asia and the Pacific across all sectors has decreased by 0.44%, whereas in economies outside of the Asia-Pacific region it has increased by 0.77%. The decrease in restrictiveness has been mainly driven by barriers to competition (an 11.7% decrease in Asia and the Pacific) and restrictions to movements of people (a 1.5% decrease in Asia and the Pacific), which saw decreases across most services sectors (see figure B). The other discriminatory measures subcategory, however, saw the largest increase in restrictiveness in the region, increasing by 12.6%. Notably, the key services sector experiencing the largest increase in restrictiveness in Asia and the Pacific was Telecom (overall increase by 28.6%), excluding which would see overall trade restrictiveness of the region fall by 1.8% (as opposed to a 0.44% decrease across all sectors mentioned earlier). Services sectors in the Asia-Pacific region that saw the highest reductions in restrictiveness include “sound recording” (8.7% decrease), “engineering” (6.1% decrease), “computers” and “logistics customs brokerage” (both experiencing 4.2% decreases).

**Figure B. Average services trade restrictiveness change for all sectors, between 2014 and 2018, in the Asia-Pacific region and the rest of the world**



Source: ESCAP calculations based on the OECD Services Trade Restrictiveness Index dataset (accessed August 2019).

in goods should be accompanied by streamlining regulatory measures on services.

#### 4. NTMs and digital barriers

Sharing data electronically together with the digitalization of trade and investment information can reduce the costs of implementing NTMs, and of trade and investment in general. However, some policy measures that hinder the cross-border transfer of data and services have been increasing, such as privacy protection regulations and digital taxation policies; while some measures affecting trade in financial services have been easing, others have been increasing. Information and communications technology standards have also been rising with mixed costs and benefits. With increasing growth in network technologies and declining trade costs for transfer of non-physical products, a range of security, competition and revenue issues arise. NTM efforts to address these concerns raise their own efficiency and distributional considerations.

One of the largest issues currently being debated is taxation of international Internet sales, in which traditional revenue collection efforts in the jurisdiction where a business is established or headquartered, may mean that the bulk of a firm's sales generate little or no tax revenue where its goods or services are consumed. The lack of consistency or consensus in treatment of Internet sales, and the inefficient multiplication of tasks, both for businesses and Governments involved, points to an important area for regional cooperation; however, the global reach of such sales also calls for a multilateral agreement with commensurate powers of enforcement.

#### 5. NTMs and FDI

Sustainable FDI, which can be thought of as a “commercially viable investment that makes a maximum contribution to the economic, social and environmental development of host countries and takes place in the context of fair governance mechanisms” (Sauvant and Mann, 2017), is equally affected by NTMs (see chapter 2 section B). FDI for production purposes is particularly affected by technical standards, intellectual property rights (IPRs) and local content requirements, but may also be

influenced by seemingly indirect regulations such as movement of natural persons (WTO mode 4 of services trade). When foreign or domestic private investors face an uneven playing field resulting from NTMs, competition policy can be important. It may also come into play for addressing state owned enterprises' (SOEs') preferential treatment in credit provision, subsidies or tax deferrals.

In a manner analogous to the Authorized Operators provision of the WTO TFA, creating a category of “Authorized Sustainable Investors” could allow qualified international investors to access preferred investment facilitation benefits. To qualify, investors might need to commit to creating backward linkages, contributing to community development, reducing their carbon footprint, engaging with specified stakeholders, maintaining supply chain standards or other commitments sought by host Governments for sustainable development (Gabor and Sauvant, 2019). In return, host Governments may offer pre-establishment national treatment.

#### 6. Other considerations

A useful step to help address NTMs and related procedural obstacles would be to establish a regional NTB reporting, monitoring and elimination mechanism similar to [tradebarriers.org](http://tradebarriers.org) in which countries must reply and suggest solutions (online or via SMS).<sup>15</sup> This type of mechanism would be more effective if underpinned by an intergovernmental agreement, at least at a (sub)regional level.

As noted in the chapter, to achieve greater efficacy in the use of NTMs for sustainable net benefits, attention needs to be given to their design, development, and implementation. It would be beneficial for guidelines on sustainability impact assessment of new and existing NTMs to be developed in close consultation with Governments. Such guidelines should cover all three dimensions of sustainable development, namely social, environmental and economic.

Capacity-building in, and retention of, expertise needs to be intensified and strengthened, both at the domestic and the regional levels, supported by sharing of best practices. An integrated approach

<sup>15</sup> As part of the African Continental Free Trade Agreement, member States recently launched a similar initiative, see [www.tradebarriers.africa](http://www.tradebarriers.africa).

involving producers, officials, exporters and other affected parties may ensure more effective capacity-building with longer-lasting results. More emphasis on training of trainers may also help sustainability of knowledge at a local level.

In conclusion, in the Asia-Pacific region, actions and policies to streamline and reduce NTMs to shift the balance of their positive and negative impacts towards greater sustainable net benefits have been

put in place, and many are still ongoing. More needs to be done by all actors. Several recommendations were put forward in this report. A good guiding principle for underlying NTM design and implementation should be “compliance should be easy to do, but hard to avoid”. Learning from the advances (and mistakes) of others can simplify and speed up the progress, highlighting the need for greater domestic, bilateral, plurilateral and multilateral communication and cooperation in this area.

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# Conclusion

During the past two decades, while applied tariffs in the Asia-Pacific region have decreased, the number of NTMs has risen significantly. Although NTMs often serve legitimate and important public policy objectives, their trade costs are estimated to be more than double that of ordinary customs tariffs. This report provided an overview of NTM trends and developments in Asia and the Pacific. It explored how NTMs relate to the SDGs. This was followed by a discussion of the impacts of NTMs on trade and investment, together with a private sector perspective outlining the difficulties posed by NTMs and related procedural obstacles. The extent to which NTMs were aligned with existing international standards was evaluated, followed by a review of existing practices on streamlining NTMs at the national and regional levels.

The introductory chapter presented an overview of the trends and stocks of NTMs in the Asia-Pacific region. It noted the rising importance of NTMs as barriers to trade at the regional and global levels. The proliferation in NTMs globally and within the region mean that they are now a more significant deterrent to trade than ordinary customs tariffs. At the same time, NTMs do have an important role in addressing public policy objectives, including those embedded in the 2030 Sustainable Development Agenda. **A key challenge, therefore, is how to strike the right balance between their positive (intended) effects and their cost to traders (and ultimately consumers).**

Chapter 1 explored how NTMs address the SDGs. The analysis showed that almost half of NTMs in Asia and the Pacific directly address SDGs, with the highest share of SDG-related NTMs in the Asia-Pacific region, and globally, directly addressing Goal 3 (Good Health and Well-being). The analysis indicated that regulation miss to address some SDG targets. For example, only about 10% of the economies in Asia and the Pacific have at least one NTM addressing illegal, unreported and unregulated (IUU) fishing and illegal timber trade. At the same time, sometimes well-intentioned NTM regulations addressing one dimension of sustainable development may inadvertently, negatively and severely affect other dimensions. **As such, detailed sustainability impact assessments at the country and sector levels are recommended in order to draw accurate conclusions for each new or existing NTM.**

Chapter 2 noted that while NTMs often serve legitimate and necessary purposes, they generally add costs to trade. While some developed economies outside of the region have more NTMs in place, costs related to NTMs are higher in Asia and the Pacific, suggesting that the design or the implementation of NTMs in the Asia-Pacific region is less efficient. The chapter also explored the relationship between NTMs and FDI. Case study analyses suggested that certain NTMs have a significant impact on FDI. At the same time, a potentially positive effect of NTMs on FDI may be offset by the negative effect on trade; hence, these impacts cannot be considered in isolation. An analysis of private sector surveys on NTMs in the

Asia-Pacific region revealed that domestic procedural obstacles – rather than the required standards embedded in NTMs – are the primary reason why foreign and domestic NTMs are perceived to be burdensome. **As such, policymakers wishing to promote exports need to address domestic procedural obstacles through trade facilitation as a priority.**

Chapter 3 emphasized that a significant share of trade costs stem from the fact that technical regulations (SPS and TBT) remain often very different between countries and need to be better coordinated or harmonized, in particular through the use of international standards. Most countries in Asia and the Pacific have been found to diverge from the recommendations of international standards bodies listed in the WTO SPS Agreement and thus under-regulate. Many developing countries lack the necessary quality infrastructure to assess conformity, and thus apply less regulations. Many also are not in a position to actively participate in the standard-setting process such that international standards are not always relevant and adapted to their needs. **Capacity-building in, and retention of, expertise needs to be strengthened; this includes ensuring developing countries can effectively participate in international standards development.**

Taking the above findings into consideration, Chapter 4 highlighted good practices in streamlining NTMs for sustainable benefits. The key to maximizing benefits is to determine appropriate levels of protection as well as reduce the cost of compliance and the divergence among legitimate NTMs. Reviewing existing NTMs and ensuring that new NTMs are systematically subject to a regulatory impact assessment are essential starting points. Enhancing transparency in NTMs and related procedures, including through trade digitalization, can also reduce NTM-related costs. Regional initiatives and cooperation have an important role to play in these areas, as reflected in the content of newer RTAs. **Given the high costs associated with NTMs, countries in Asia and the Pacific may consider enhancing cooperation further, for example, by establishing a regional NTB private sector reporting mechanism and developing common guidelines on sustainability impact assessment of NTMs.**

## NOTES

## NOTES

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*The Asia-Pacific Trade and Investment Report (APTIR) is a biennial publication prepared by the Trade, Investment and Innovation Division of the United Nations Economic and Social Commission for Asia and the Pacific to provide insights into the impact of recent and emerging developments in trade and foreign direct investment on countries' abilities to meet the challenges of achieving sustainable development.*

*The theme of APTIR 2019 is Navigating Non-tariff Measures (NTMs) towards Sustainable Development. The Report provides an overview of NTM trends and developments in the Asia and the Pacific region, and explores the relationships between NTMs and the Sustainable Development Goals. It evaluates the impacts of NTMs on trade and investment, based on both quantitative analysis and private sector surveys. The Report highlights the importance of aligning NTMs with international standards, and of simplifying procedures related to these regulatory measures. It also includes a review of good practices for addressing NTMs unilaterally, as well as through multilateral and regional trade agreements. The report closes by offering sets of national- and regional-level policy recommendations for streamlining NTMs for sustainable benefits.*

ISBN: 978-92-1-120795-8

