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Abstract

Greening Regional Trade Agreements on Non-Tariff Measures through Technical Barriers to Trade and Regulatory Co-operation

Christophe Bellmann and Colette van der Ven

Governments increasingly recognise the need to ensure that economic integration through trade agreements reflects social and environmental concerns. As traditional tariff barriers are progressively reduced worldwide, trading partners aim towards deeper economic integration by addressing non-tariff measures, including technical barriers to trade (TBT). These measures can take the form of technical regulations, standards or conformity assessment procedures, and are largely used by governments to promote public policy objectives including for the environment. While essential for addressing sustainability concerns, environmental requirements can entail significant compliance costs for exporters, especially when they differ across jurisdictions. This can be alleviated through enhanced regulatory coherence by following due process in crafting regulations, applying good regulatory practices (GRP) and undertaking international regulatory co-operation (IRC).

In this context, this report explores how regional trade agreements (RTAs) can serve as a vehicle to reflect environmental objectives in chapters and articles dealing with technical barriers to trade and regulatory co-operation. In particular, the analysis builds upon examples from seven recent RTAs that aim at deep economic integration, and explores ways to further incorporate environmental objectives. The report identifies a range of options to reconcile economic and environmental objectives, related to areas of technical barriers to trade and regulatory co-operation, by incorporating environmental considerations as overarching principles, provisions on regulatory impact assessments and ex post evaluations, non-regression clauses, and dedicated chapters and sectoral annexes.

JEL classification: F13, F18, R11, Q56

Keywords: Regional trade agreements, environmental provisions, trade and environment, environment policy, trade policy, non-tariff measures, technical barriers to trade, international regulatory co-operation.

Résumé

Les gouvernements reconnaissent de plus en plus la nécessité de veiller à ce que l'intégration économique par le biais d'accords commerciaux reflète les préoccupations sociales et environnementales. Les barrières tarifaires traditionnelles étant progressivement réduites dans le monde, les partenaires commerciaux visent une intégration économique plus poussée en travaillant sur les mesures non tarifaires, y compris les obstacles techniques au commerce (OTC). Ces mesures peuvent prendre la forme de règlements techniques, de normes ou de procédures d'évaluation de la conformité, et sont largement utilisées par les gouvernements pour promouvoir des objectifs de politique publique, notamment en matière d'environnement. Bien qu'elles soient essentielles pour répondre aux préoccupations en matière de durabilité, les exigences environnementales peuvent entraîner des coûts de conformité importants pour les exportateurs, en particulier lorsqu'elles diffèrent d'une juridiction à l'autre. Il est possible d'atténuer ces coûts en améliorant la cohérence de la réglementation par le respect des procédures établies dans l'élaboration des réglementations, l'application des bonnes pratiques réglementaires (BPR) et la coopération internationale en matière de réglementation (CIR).

Dans ce contexte, le présent rapport examine comment les accords commerciaux régionaux (ACR) peuvent permettre de refléter les objectifs environnementaux dans les chapitres et articles traitant des obstacles techniques au commerce et de la coopération réglementaire. L'analyse s'appuie notamment sur des exemples tirés de sept ACR récents qui visent une intégration économique profonde, et explore les moyens d'intégrer davantage les objectifs environnementaux. Le rapport identifie une série d'options pour concilier les objectifs économiques et environnementaux, liés aux domaines des obstacles techniques au commerce et de la coopération réglementaire, en intégrant les considérations environnementales en tant que principes fondamentaux, les dispositions relatives aux études d'impact réglementaire et aux évaluations ex post, les clauses de non-régression, ainsi que des chapitres et des annexes sectorielles spécifiques.

Classification JEL: F13, F18, R11, Q56

Mots clés: Accords commerciaux régionaux, accords de libre-échange, dispositions environnementales, commerce et environnement, politique environnementale, politique commerciale, mesures non tarifaires, obstacles techniques au commerce, coopération internationale en matière de réglementation

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Executive Summary

In recent years, governments have increasingly recognised the need to ensure that economic integration through trade agreements reflects social and environmental concerns. In todays' globalised economy, addressing transboundary environmental challenges increasingly requires deliberate and consistent policy approaches among countries.

As traditional tariff barriers are progressively reduced worldwide, trading partners aim towards deeper economic integration in non-tariff measures, including technical barriers to trade (TBT). These measures can take the form of technical regulations, standards or conformity assessment procedures, and are largely used by governments to advance a variety of public policy objectives such as health, safety or environmental protection (e.g. environmental regulations on energy efficiency, resource efficiency and circular economy). While essential to address sustainability concerns, environmental requirements can entail significant compliance costs for exporters, especially when they differ across jurisdictions. Such costs relate to the gathering of information on regulatory requirements in different markets, adjusting product specifications to comply with different requirements or undertaking various conformity assessment to prove compliance.

These issues arising from economic integration and environmental sustainability call for enhanced regulatory coherence across jurisdictions, not only to reduce trade costs but also for environmental reasons. This can be partially achieved by following due process in the crafting of regulations and applying good regulatory practices (GRP). It also calls for international regulatory co-operation (IRC) among regulating agencies.

In this context, this report explores how regional trade agreements (RTAs) can serve as a vehicle to reflect environmental objectives in chapters and articles dealing with TBT and regulatory co-operation. In doing so, this report builds upon examples from seven recent RTAs that aim at deep economic integration: the EU-Canada Comprehensive Economic and Trade Agreement (CETA), the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), the United States-Mexico-Canada Agreement (USMCA), the New Zealand-Singapore Closer Economic Partnership, the Pacific Alliance, the EU-Japan Economic Partnership Agreement, and the EU-Singapore FTA.

Recently concluded RTAs include additional disciplines to multilateral trade rules set forth by the World Trade Organization (WTO) in fostering enhanced transparency or encouraging harmonisation, and mutual recognition of conformity assessment procedures. Provisions on technical regulations, standards and conformity assessments are found both under TBT chapters and under dedicated chapters dealing with good regulatory practices or international regulatory co-operation depending on the agreement.

Horizontal provisions fostering harmonisation, mutual recognition, equivalence and transparency, rarely make specific reference to the environment, with a number of exceptions. Regarding the harmonisation of technical regulations to international standards, some RTAs identify international standards that can support regulatory cooperation, with several directly related to the environment. Other RTAs contain language to reaffirm that efforts towards harmonisation should not result in the lowest common denominator and undermine environmental objectives.

Some RTAs also contain entirely new chapters focusing on international regulatory co-operation or good regulatory practices, to further enhance countries' policy-making

processes. These RTAs have included commitments to harmonise test procedures and performance standards in specific environmental sectors such as energy efficiency. A few RTAs encourage mutual recognition of technical regulations and conformity assessment procedures, referring to specific clean technology products (e.g. wind turbines, photovoltaic cells). Several RTAs include advanced transparency mechanisms to exchange information in specific sectors including environment or health related areas such as motor vehicle, energy efficiency or animal welfare.

Overall, general disciplines on good regulatory practices and regulatory co-operation can generate environmental benefits by ensuring that technical regulations and standards are fair and science based, by engaging relevant stakeholders, by promoting harmonisation through the adoption of international standards, or by encouraging mutual recognition of conformity assessment procedures.

However, the degree to which these provisions effectively support the environment remains as an open question. Some experts take the view that environmental benefits of enhanced regulatory co-operation do not result as much from enhanced environmental performances but rather from the trade facilitating effect of eliminating duplicative or divergent regulations or procedures. Environmental benefits would therefore only materialise in situations where enhanced trade also contributes to the achievement of environmental objectives, for example by facilitating the diffusion of environmentally friendly technologies. In other cases, this trade facilitation bias could promote convergence towards less stringent environmental protection or the lowest common denominator. Similarly, stakeholder engagement procedures allowing foreign actors to participate in the preparation or review of regulations can be captured by vested interests, and lead to suboptimal outcomes from an environmental perspective.

In the absence of empirical evidence to evaluate these outcomes, a logical approach in the design of future RTAs could consist in minimising risks associated with suboptimal environmental outcomes while maximising opportunities provided by win-win situations.

Minimising suboptimal outcomes may be achieved by complementing the horizontal disciplines enshrined in RTAs with a set of more specific environmental clauses. Based on existing precedents, this may entail (a) incorporating environmental protection as an objective or basic principle of enhanced regulatory co-operation, (b) incorporating, when relevant, environmental considerations in regulatory impact assessment or ex post evaluations, (c) introducing non-regression clauses providing that regulatory co-operation should not result in lower environmental protection. Such provisions would ensure that enhanced regulatory co-operation does not undermine environmental objectives.

Maximising opportunities for win-win solutions could also be achieved through special provisions, dedicated chapters or sectoral annexes dealing either with a particular sector or a specific environmental challenge such as improving energy efficiency or promoting resource efficiency and circular economy. According to this review of existing agreements, this is where innovation is happening and where the highest potential for enhanced environmental outcome lies. Most RTAs examined already include some chapters or annexes that foster regulatory co-operation with respect to particular products of environmental relevance. By virtue of their specificity, their effect in advancing environmental objectives is likely to be more immediate than the horizontal TBT and IRC/GRP provisions. The appropriate design of such provisions would depend on the type of environmental challenge at hand; the existence of international standards; the level of trust and integration that exists between the Parties of an RTA; the similarity in existing regulations and standards between Parties to the RTA; or the novelty of the issue.

1. Introduction

Global economic integration is widely regarded as a key driver of growth and development. In recent years however, trade and investment agreements have been facing criticism regarding their social and environmental impacts. This has prompted calls to further reflect sustainability concerns in free trade agreements, not only as a way to ensure public acceptability, but also to contribute to the achievement of global priorities such as those enshrined in the Paris Climate Accord or the Sustainable Development Goals (SDGs).

As traditional tariff barriers are progressively reduced or eliminated worldwide, trade pacts are increasingly focusing their attention on non-tariff measures (Baldwin, 2014[1]). Among these measures, technical regulations, standards and conformity assessment procedures represent critical policy instruments for governments to advance a variety of public policy objectives ranging from health and safety to environmental protection or consumer information. For instance, many governments have adopted technical regulation and/or standards on minimum energy efficiency requirements, maximum emissions on motor vehicles, or minimum levels of recyclability in a product.

From a trade perspective, when those standards and regulations differ across jurisdictions, they may create unnecessary compliance costs, particularly for small and medium enterprises (SMEs). They may even become barriers to trade, if they reflect exclusively local concerns and/or environmental characteristics that may be difficult to comply with for companies located in other countries. From an environmental perspective, the divergent nature of standards and regulations can also affect the ability of societies to deal with pressing sustainability challenges. In a globalised world economy dominated by highly integrated supply chains, addressing transboundary environmental challenges such as climate change, increasingly requires coherent policy approaches across jurisdictions. In these situations, less stringent regulations in some parts of the world may induce concerns of leakage and competitiveness as illustrated by the ongoing debate on border carbon adjustments.

All these elements point to the need for harmonisation or, at least, enhanced co-operation in the design and implementation of environmental standards and regulations. In this context, trade agreements are often seen as a vehicle to address the costs resulting from the duplicative or divergent nature of regulations. Such efforts however require finding the right balance between facilitating trade on the one hand, while at the same time, securing high levels of environmental protection.

The World Trade Organization (WTO) Agreement on Technical Barriers to Trade (TBT) contains provisions encouraging countries to harmonise their technical regulations and standards. Building on the WTO, Regional Trade Agreements (RTAs) increasingly contain additional disciplines fostering enhanced transparency or encouraging harmonisation, and mutual recognition of conformity assessment procedures. Recent RTAs, which aim towards deeper economic integration, also contain chapters with no WTO equivalent on international regulatory co-operation and/or good regulatory practices, to further enhance countries' policy-making processes.

In this rapidly evolving landscape, this report examines the extent to which RTAs could be used to address the fragmentation of environmental standards and regulations.[1] Starting from a review of the literature and relevant provisions in existing trade pacts, it explores how RTAs can incorporate environmental objectives in chapters and articles related specifically to non-tariff measures with a particular focus on TBT and regulatory co-operation.[2] In doing so this report builds upon examples of horizontal disciplines and environment-specific references in seven recent RTAs that aim at deep economic integration between trading partners: the EU-Canada Comprehensive Economic and Trade Agreement (CETA), the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), the United States-Mexico-Canada Agreement (USMCA), the New Zealand-Singapore Closer Economic Partnership, the Pacific Alliance, and the EU-Japan Economic Partnership Agreement, and the EU-Singapore Free Trade Agreement.

After this introduction, Section 2 reviews the importance of technical barriers to trade and regulatory co-operation for the environment, and highlights the rationale for international co-operation in this area. Section 3 looks at how these issues are currently addressed at the multilateral level, in the WTO, by reviewing existing TBT disciplines, their implementation, and the experience from notifications of environmental measures. Building on this multilateral context, Section 4 reviews state-of-the art TBT and regulatory co-operation provisions in modern RTAs and assess their potential relevance from an environmental perspective. Section 5 explores possible ways to further incorporate environmental objectives in RTAs, looking at horizontal and environment-specific measures. In doing so it provides examples of how the findings of this report can be applied in two environmental areas, namely the transition to a resource efficient and circular economy and the promotion of energy efficiency. Finally, Section 6 provides a conclusion recapping our findings and identifying areas of future research.

[1] The report forms part of the OECD project of the Joint Working Party on Trade and Environment (JWPTE) called "Greening RTAs" which aims to investigate in what ways RTAs could incorporate environmental objectives in chapters and articles that are not specific to the environment to secure policy coherence across agreements. This initiative complements earlier work carried out inter-alia by the OECD on trade and environment, which largely focused on analysing environmental provisions located either in the preamble, the environment and sustainable development chapters or the general exceptions of RTAs. By exploring options to reflect environmental concerns directly in the chapters dealing with TBT and regulatory co-operation, this analysis also adds an environmental angle to the more generic work undertaken by the OECD on RTAs and non-tariff measures.

[2] Non-tariff measures (NTMs) generally encompass all policy measures — other than ordinary customs tariffs - that can affect trade in goods or services. They not only include technical regulations, such as environmental protection measures but also quotas, rules of origin, price control, exports restrictions, or subsidies, to list just a few. UNCTAD (2019[43]) provides a comprehensive classification of NTMs. Within this broad scope, this report focuses on a subset of NTMs, namely technical barriers to trade (TBT) as they pertain to goods and explores ways in which enhanced regulatory co-operation can help reduce the costs associated with such barriers. It does not address sanitary and phytosanitary measures (SPS) nor domestic regulations pertaining to services.

2. Overview on technical barriers to trade, regulatory co-operation and the environment

This section provides a general overview of the relevance of technical barriers to trade (TBT) and regulatory co-operation provisions for the environment. It then highlights the main rational for international co-operation in this area and, finally, discusses why regional trade agreements (RTAs) could serve as vehicle for such co-operation.

TBT measures cover technical regulations, standards and conformity assessment procedures. They lay down product characteristics or their related processes and production methods; and define mandatory or voluntary guidelines and procedure to determine that such requirements are fulfilled. A specific definition of those terms is provided in Annex 1 of the WTO Agreement on Technical Barriers to Trade and is briefly summarised in Box 1.

Box 1. What are technical regulations, standards and conformity assessment procedures?

Technical regulations, standards and conformity assessments are defined in Annex 1 of the WTO TBT Agreement. Such definitions are briefly summarised below.

Technical regulations are defined as documents laying down product characteristics or their related processes and production methods with which compliance is mandatory. They may also include or deal with terminology, symbols, packaging or labeling requirements. For example, a mandatory requirement that packaging must be recyclable. In a similar vein imposing a minimum energy performance for electric appliances would constitute a technical regulation if compliance with such requirement is mandatory.

Standards are documents approved by a recognised body, that provide for common and repeated rules, guidelines or characteristics for products or related processes and production methods with which compliance is not mandatory. They may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method. For example, government guidelines defining what product need to fulfil to qualify as organic. Another example of standard would be the ISO 14000 family of standards for environmental management developed by the International Standardization Organization.

Finally, *conformity assessments procedures* are any procedure used directly or indirectly to determine that relevant requirements in technical regulations or standards are fulfilled. These include for example procedure for sampling, testing, inspection, registration or accreditation.

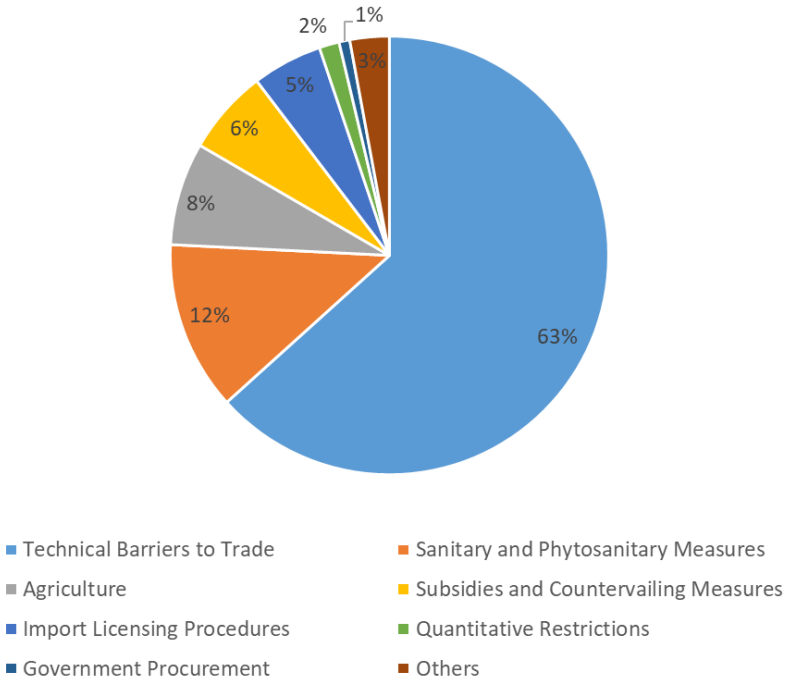
Technical regulations, standards and conformity assessments procedures may be developed by central governments, local government bodies or non-governmental bodies. In the case of standards, regional or international standardising bodies may also be involved. WTO, disciplines apply differently to these various levels of governance. In order to avoid unnecessary differences in the requirements facing exporters in different jurisdiction and to avoid duplicating testing procedures, WTO disciplines and many RTAs tend to promote the harmonisation, equivalences or the mutual recognition of technical regulations, standards and conformity assessment procedures.

The environmental relevance of technical regulations, standards or conformity assessment

Given their potential in shaping production and consumption patterns, technical regulations, standards and conformity assessment procedures constitute one of the main policy instruments used to implement environmental objectives.

Roughly two thirds of all environment-related notifications and measures in the WTO are in the form of technical barriers to trade, largely before sanitary and phytosanitary (SPS) measures or other agriculture-related policies (see Figure 1).[3]

Figure 1. Environment-related measures notified to the WTO by agreement 2009-2018



Source: WTO environmental database available at https://edb.wto.org/charts.

Environmental standards and regulations can be either mandatory or voluntary in nature depending on whether they are established by public authorities or private entities. They usually set certain minimum expectations relating to the composition and operation of products or their production processes and methods.

Common examples of environmental standards and regulations include voluntary or mandatory energy efficient standards and labelling (EESL) initiatives, such as the EU

[3] Throughout WTO agreements and other legal instruments, Members are required to notify to the WTO or give public notice of different types of policy measures applied domestically. The WTO environmental database compiles policy measures notified under different WTO agreements that have environmental protection as a stated objective.

regulation for energy labelling[4] or the Energy Star programme run by the US Environmental Protection Agency (EPA) and the US Department of Energy. These initiatives have largely contributed to reducing greenhouse gas emissions while saving energy spending. Indeed, according to estimates of the International Energy Agency (IEA, 2015[2]), mature national EESL programs save between 10% and 25% of energy consumption, with national benefits largely outweighing additional costs.

In the context of a transition towards a more resource efficient and circular economy, governments increasingly adopt extended producer responsibility (EPR) schemes including standards for recycled materials, recyclability and reparability of products, or requirements for eco-design, or to phase-out hazardous substances (Yamaguchi, 2018[3]).[5] The technical regulations, standards and conformity procedures underpinning such schemes provide critical incentives to make design changes, improve product recyclability and reusability and reduce the use of natural resources (Walls, 2006[4]).

Similarly, stringent import documentation, certification or traceability requirements, directly contribute to the fight against illegal, unreported and unregulated (IUU) fishing in a sector where products are often traded and transported across multiple jurisdictions at different stages of the value chains. The EU Regulation on IUU Fishing, for example, uses a catch certification scheme to ensure full traceability of marine fishery products traded with the EU. Similar initiatives to combat IUU can also take the form of private standards, certification and labelling schemes such as the one developed by the European Fish processors and Export/Import Association (AIPCE).[6] Another sector where regulations and standards play a critical role include timber trade, as illustrated by schemes such as the EU timber regulation,[7] the 2008 amendment to the US Lacey Act or the 2012 Australian Illegal Logging Prohibition Act.[8]

4 See Regulation (EU) 2017/1369 of the European Parliament and of the Council of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU.

5 Examples of such scheme include take-back programs for waste electrical and electronic equipment (WEEE), in countries such as the Netherlands, Germany or the UK, the European Union's End of Life Vehicles (ELV) Directive (2000/53/EC) or the South Korea's 2007 Act for Resource Recycling of Electrical and Electronic Equipment and Vehicles.

6 AIPCE conditions the purchase of white fish from the Barents Sea to a supplier's statement that the fish was legally caught, subject to independent third-party auditing. This voluntary initiative, combined with additional port control measures was estimated to reduce illegal landings by more than 50 percent (Burnett et al., 2008[33]).

7 See EU Regulation No 995/2010 of the European Parliament and of the Council of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market.

8 A key issue in this area is however whether the trade measures identified in such scheme always qualify as "technical regulations" as defined under the TBT Agreements (i.e. as a document which lays down product characteristics or their related process and production methods according to Annex I:1 of TBT Agreement). For example, the Appellate Body overturned a recent Panel's decision that an EU seal ban was a "technical regulation" because the ban did not "lay down product characteristics" (Young, 2015[48]).

The rationale for international co-operation on technical regulations, standards and conformity assessment

While domestic initiatives are critical in advancing environmental objectives, they also entail costs for exporters when products are exposed to different regulations and standards across multiple jurisdictions. To be sure, regulatory heterogeneity may be perfectly legitimate and justified by differences in domestic conditions or public policy priorities. However, the duplicative or divergent nature of regulations can lead to inefficiencies and multiple trade costs particularly for small and medium enterprises (SMEs).

These trade costs may include the cost of gathering information on regulatory requirements in different markets; adjusting the specification of goods to comply with different requirements; or undertaking various conformity assessment to prove compliance (OECD, 2017[5]). Indeed, as highlighted by Steenblik and Kim (2009[6]), variations in technical regulation and conformity assessment procedure are often considered as one of the key obstacles preventing trade in environmental goods and services.[9]

In several cases, these discrepancies are simply the result of rule-making processes working in isolation. For example, a common complaint by exporters is that eco-labelling criteria tend to focus on local concerns and do not address the views of foreign suppliers because they are mostly determined through consultation with national stakeholders only. In this respect, it is likely that at least part of these trade costs could be avoided without affecting the right of countries to regulate (OECD, 2017[5]).

Beyond trade costs, there is also an environmental rationale for enhanced regulatory coherence. In todays' globalised economy, addressing transboundary environmental challenges like climate change, biodiversity conservation or the protection of marine resources, increasingly requires consistent policy approaches (Bollyky, 2017[7]).[10] For example, one study finds that if harmonisation of minimum energy performance requirements (MEPS) at the current highest requirement levels was implement worldwide, it would enable a global energy saving of 13-14 percent and would reduce global GHG emissions by 7 percent by 2030 (Molenbroek et al., 2015[8]).

Another environmental justification relates to the creation of a level playing field to address competitiveness concerns and avoid leakage. When foreign producers do not have to comply with the same environmental standards as domestic producers this may result in the displacement of polluting industries to places with less stringent environmental requirements. While the empirical evidence supporting this "pollution heaven hypothesis" remains limited (Koźluk and Timiliotis, 2016[9]), such concerns may intensify with the adoption of stricter regulations in sectors heavily exposed to trade as illustrated by the debate on carbon border adjustment.

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9 The heterogeneity of standards is a particular problem in emerging concepts like the circular economy, which is driven predominantly – if not exclusively – by national and regional policies and roadmaps, such as the EU's new Circular Economy Action Plan, or China's EPR framework, set out in its 13th Five Year Plan. These national roadmaps contain different criteria and requirements for EPR, and will vary in their recycling requirements, as well as their labelling schemes and extended legal warranties. For those exporters looking at entering both the Chinese and European market, this may require different product design for each separate market.

10 Further analysis of the rationale for deploying IRC mechanisms for environmental challenges is discussed for example in Kauffmann and Saffirio (2020[17]).

These concerns highlight the rationale for enhanced regulatory coherence across jurisdictions not only as a way to reduce trade costs but also for environmental reasons. This can be partially achieved by following due process in the crafting of regulations and applying good regulatory practices (GRP). For example, the 2012 OECD Recommendation on Regulatory Policy and Governance, recognises the need to establish institutions, governance and processes to ensure that regulations are fit for purpose and do not impose unnecessary costs on society including exporters. Such good regulatory practices include for example the systematic use of regulatory impact assessment (RIAs), stakeholder engagement or ex-post regulatory evaluation.

Principle 12 of the 2012 OECD Recommendation on Regulatory Policy and Governance, also calls for international regulatory co-operation (IRC). In order to develop quality regulations, regulators need to consider the impact of their action beyond their domestic border and cooperate with their foreign counterparts in different fora. An illustration of this is the 2016 OECD policy guidance on resource efficiency and the OECD updated guidance on Extended Producer Responsibility, which call for the international harmonisation of eco-design incentives in order to reduce potential trade barriers for globally-traded products (OECD, 2016[10]; OECD, 2016[11]).

The role of trade agreements in fostering regulatory co-operation

OECD (2013[12]) defines IRC as any step formal or informal taken unilaterally, bilaterally or multilaterally by jurisdictions to promote some form of co-ordination or coherence in the design, monitoring, enforcement, or ex post management of regulation. More specifically, it identifies 11 mechanisms of co-operation ranging from dialogues and informal exchanges of information to mutual recognition agreements or the harmonisation of technical regulations.

These different forms are often considered to be continuum starting with the unilateral adoption of good regulatory practices and evolving to deeper forms of co-operation, as regulators build greater trust with each other. Hoekman and Mavroidis (2015[13]), distinguish four degrees of international coordination on regulatory matters namely (a) competition or the absence of coordination; (b) coherence through the adoption of common principles of due process; (c) looser forms of co-operation such as agreement to consult on new proposed regulations or mechanisms to raise specific concerns; and (d) deeper forms of co-operation such as mutual recognition agreements, recognition of equivalence, harmonisation, or international standardisation. Table 1 briefly summarises these different degrees of co-operation.

Table 1. Degree of international co-operation in regulatory matters

	Description	Comments
Competition between regimes	Different jurisdictions apply independently their own set of regulations to products and producers.	Competition may help to identify more efficient forms of regulation but may also lead to a "race to the bottom" or, more frequently, additional compliance costs.
Coherence	Different jurisdictions adopt generally accepted good regulatory practices (GRP) in the process of developing new regulations (e.g. stakeholder consultation, regulatory impact assessment, ex-post evaluations, etc.)	These instruments aim to "rationalise" policies with a focus on the process through which regulations are developed and implemented, not the objectives or the substance.
Consultation	Different jurisdictions establish mechanisms to exchange information and comments on regulations (e.g. specific trade concerns under the WTO TBT Agreement, or provisions in RTAs for consultations before implementing a new regulation).	Consultation goes beyond good regulatory practices and start addressing the substance of regulations and their effects through exchange of information among trading partners.
Co-operation	Different jurisdiction recognise their respective regulatory regimes as equivalent, or undertake efforts to adopt common regulatory standards or conformity assessment processes.	Co-operation focuses on reducing unnecessary trade costs by promoting inter-operability of regulations and conformity procedures through harmonisation, mutual recognition or equivalences.

Source: Adapted from Hoekman and Mavroidis (2015[13]).

To a large degree, the type of co-operation depends on the objectives to be achieved, the complexity of the sector at hand or its novelty, with deeper forms of co-operation being often easier on novel regulatory issues when agencies are less entrenched in their existing practice. Deeper engagement, such as equivalence, or mutual recognition are also easier among trusted, sophisticated, regulatory counterparts (Bollyky, 2017[7]). Additionally, co-operation will be easier if the countries have similar approaches to regulation or are at a similar level of development.

The existence of good regulatory practices is a necessary – but not a sufficient - pre-requisite for co-operation, not least because it provides the necessary predictability and confidence among regulators to allow for more advanced collaborations. Moving towards deeper forms of co-operation requires, however, willingness and ongoing commitments between regulatory departments. Such forms of regulatory co-operation are difficult to achieve. Domestic regulators may not have the mandate or the resources to engage. International co-operation may also imply the participation of different regulatory agencies within a country. Addressing these gaps requires institutions and processes that foster learning and building trust through regular communication and repeated interaction (Hoekman and Mavroidis, 2015[13]).

While many regulator to regulator co-operation activities occur outside of trade agreements, RTAs can provide the context and impetus to systematically apply GRP and initiate or maintain more advanced co-operation. As described below, the WTO already provides a multilateral transparency framework and a forum for Members to learn about each other's regulatory system, discuss proposed regulations affecting trade and collaborate to promote good regulatory practices. Recent regional trade agreements typically contain

more advanced GRP and IRC provision. Their content has evolved over time to become broader in scope and deeper in the level of commitment. While some RTAs closely mirror WTO provisions, others go beyond these provisions by clarifying or complementing existing obligations under the TBT Agreement (WTO + provisions) or by covering new aspects (WTO extra provisions).

RTA also provide the structure, resources, and high-level political commitment that many international regulatory dialogues lack. For example, while the Canada–United States Regulatory Co-operation Council (RCC) was initiated outside of North American Free Trade Agreement (NAFTA), it did clearly benefit from a specific renewal of that commitment as a result of NAFTA (Carberry, 2017[14]; OECD, 2013[15]). Finally, trade agreements, and particularly RTAs can help align regulatory objectives with market access incentives (Bollyky, 2017[7]).

3. Multilateral disciplines and practices on technical barriers to trade and regulatory co-operation

The WTO TBT Agreement constitutes the foundation or the baseline on which RTA TBT provisions are built and further elaborated. They aim at striking a balance between the need to limit unnecessary barriers to trade and the right to regulate for legitimate purposes. In other words, they seek to limit trade costs without compromising on the benefits to society.

While the TBT Agreement includes provisions encouraging the harmonisation, mutual recognition or equivalence of regulations and conformity procedures, it does not directly provide a framework for regulatory authorities to adopt regulatory co-operation arrangements. Notwithstanding this limitation, the TBT Committee established by the Agreement serves as a catalyst for constructive dialogue at the multilateral level to address trade frictions and foster co-operation.[11] It provides a platform for Members to: (i) exchange information and experiences on nascent regulation; (ii) develop guidance to support implementation; and (iii) address specific trade concerns (STCs) (OECD/WTO, 2019). In doing so, it helps settle concerns in a pre-emptive manner before they reach the WTO formal dispute settlement.

Information exchanges have focused around a variety of topics such as transparency, good regulatory practice or technical assistance, but also sector specific issues such as energy efficiency. These exchanges have enabled Members to learn about their respective experiences, particularly in areas where new regulations are emerging, and helped avoiding trade tensions at an early stage.

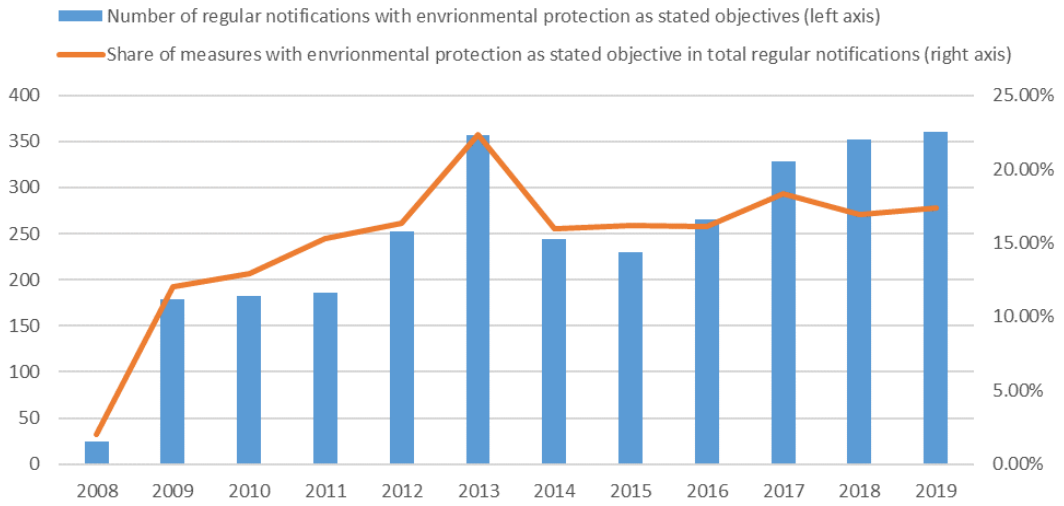
The Committee also serves as a platform to develop recommendations, guidance, decisions or principles for the implementation of the TBT Agreements.[12] These constitute additional building blocks in the form of soft law, best-endeavour commitments and informal exchange of experience which taken together form "best practices" (Wijkström, 2015[16]). Finally, it provides a space for the review of notifications and specific trade concerns raised by individual Members in areas where ongoing or potential matters of concern arise.

During the past decade, the number of notified environment-related TBT measures has increased steadily (see Figure 2). On average, environmental measures accounted for roughly 15 percent of all measures notified under the TBT Agreement.

[11] For a detailed description of how the WTO supports efforts at avoiding unnecessary regulatory divergences while preserving the right to regulate for legitimate purposes including the protection of the environment, see (OECD/WTO, 2019[49]).

[12] For example, the TBT Committee has been discussing a non-exhaustive list of voluntary mechanisms and related principles of Good Regulatory Practice (GRP) to guide Members in the efficient and effective implementation of the TBT Agreement across the regulatory lifecycle (See G/TBT/32, para. 4). These include for example transparency and public consultation mechanisms; mechanisms for assessing policy options –e.g. through the use of regulatory impact assessment (RIA) tools - internal coordination mechanisms; or mechanisms for review of existing technical regulations and conformity assessment procedures.

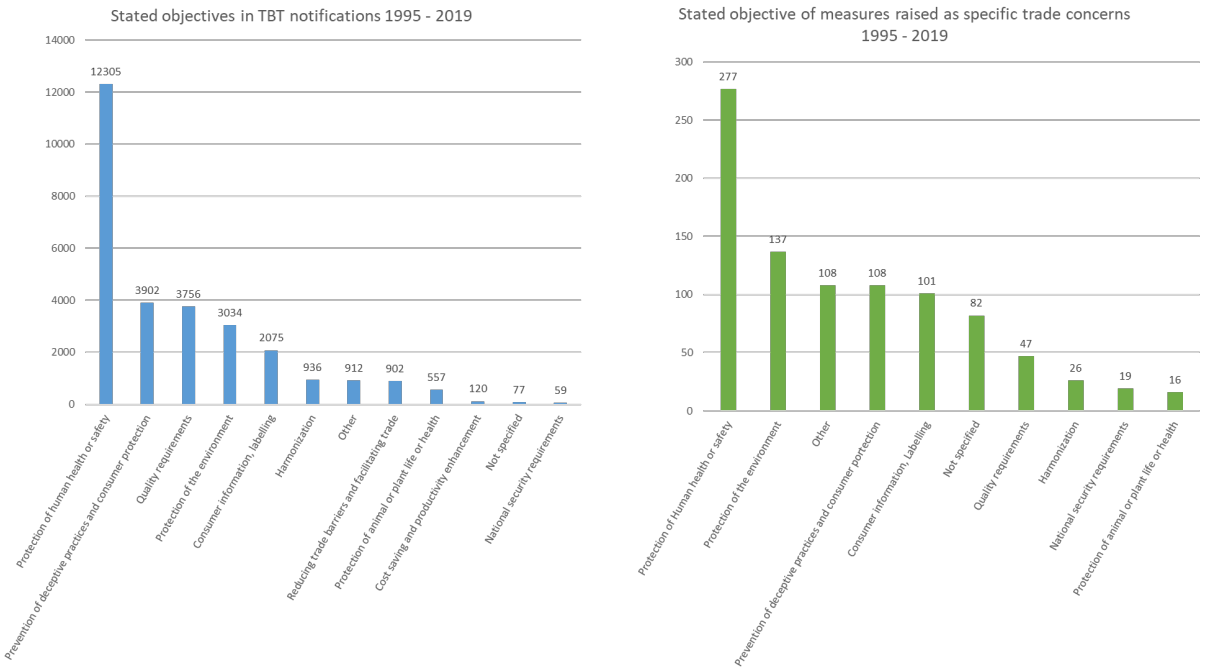
Figure 2. Regular TBT notifications of measures with environmental protection as stated objective



Source: Author's elaboration based on WTO TBT Information Management System, available at http://tbtims.wto.org/.

The most frequently cited environmental objectives include soil and water pollution abatement, energy conservation, or plant and forestry conservation. As illustrated in Figure 3, between 1995 and 2019, the protection of the environment was the fourth most frequent objective invoked for the elaboration of technical regulations and conformity assessment, immediately after the protection of human health and safety; the prevention of deceptive practices and consumer protection; and quality requirements. By contrast, environmental measures represent the second largest category for which other Members have raised specific trade concerns. On average, since 1995, nearly one fourth of the specific trade concerns (STCs) were raised with respect to a measure whose stated objective was the protection of the environment.

Figure 3. Environmental measures in TBT notifications and specific trade concerns (STCs)



Source: WTO TBT Information Management System, available at http://tbtims.wto.org/.

These STCs focused on topics as diverse as hazardous substances, chemicals and heavy metals, vehicles and air pollution control, energy efficiency of equipment and electrical appliances, resource management, waste, reuse and recycling of vehicles, electrical and electronic products, wood, fishery or seal products. The targeted measures varied from ban to labelling and certification requirements, or requirements for registration and testing, product design and performance. The higher proportion of environmental measures having been subject to specific trade concerns seem to indicate that they are more prompt to generate trade frictions, but the specific reason behind such reality remains unclear. It certainly strengthens, however, the need to ensure that such measures are not more trade restrictive than necessary to achieve the legitimate objective they pursue.

4. Technical barriers to trade, and regulatory co-operation: current RTA provisions and their environmental relevance

This section reviews existing IRC and GRP provisions in seven recent RTAs, namely the EU-Canada Comprehensive Economic and Trade Agreement (CETA), the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), the United States–Mexico–Canada Agreement (USMCA), the New Zealand – Singapore Closer Economic Partnership, the Pacific Alliance, the EU-Japan Economic Partnership Agreement and the EU-Singapore FTA. In doing so, it analyses the extent to which these provisions clarify and/or complement the TBT Agreement and their relevance from an environmental perspective. It also highlights innovative approach some RTAs are adopting that may be relevant to advance environmental objectives. This section constitutes the foundation for Section 5, which suggests further options to address environmental concerns through RTAs.

This section is organised as follows: first, it examines provisions that go beyond the TBT Agreement (TBT+), such as harmonisation, mutual recognition and equivalence, and transparency. Second, it focuses on horizontal IRC and GRP chapters – many of which do not have TBT equivalent provisions (TBT extra). Third, it provides an overview of sector-specific annexes/chapters relevant to the environment.

WTO + provisions in RTAs related to international regulatory co-operation

This section looks at WTO + provisions used to reduce trade obstacles caused by technical regulations, standards and conformity assessment procedures. WTO+ provisions related to regulatory co-operation in RTAs include:

- **Harmonisation:** This refers to the application of uniform regulations, standards or conformity assessment. To achieve this, Parties are usually encouraged to use existing international standards as a basis for their national regulations.
- **Equivalence:** The equivalence concept is based on the fact that regulatory goals can be fulfilled by different kinds of measures. The importing country recognises the "equivalence" of the objectives and conformity assessment of the exporting country for a certain product to that of its own, even if they are not the same. An example is Japan's acceptance of the US standard for organic agricultural products as equivalent to the relevant Japanese standard, allowing the products labelled in accordance with the US standard on the Japanese market.[13] Thus, agreements involving equivalence assessments make it possible to maintain distinct national regulatory measures while removing the measures' trade restrictive effects.[14]

[13] https://www.regjeringen.no/globalassets/upload/kilde/fkd/red/2004/0009/ddd/pdfv/228920-nilf_rapport_2004_9_s.pdf, p. 8.

[14] https://www.regjeringen.no/globalassets/upload/kilde/fkd/red/2004/0009/ddd/pdfv/228920-nilf_rapport_2004_9_s.pdf.

- **Mutual recognition:**[15] Another way in which trade can be facilitated is through accepting regulatory differences by way of mutual recognition, i.e. two or more Parties mutually recognise limited or general aspects of a regulatory regime The most ambitious form of mutual recognition concerns mutual recognition of rules and standards. This is possible only if the regulatory objectives are considered equivalent. Examples of mutual recognition of rules include the EU internal market between the EU Member States, and the Trans-Tasman Mutual Recognition Arrangement that provides reciprocal market access for goods between Australia and New Zealand.[16]

  Mutual Recognition Agreements (MRAs) are more limited and modest compared to mutual recognition of rules and standards. Their purpose is solely to avoid duplicative testing; it does not require equivalence or acceptance of technical requirements, regulatory objectives or conformity assessments. Rather, what is mutually recognised is (i) the technical competence of a specific conformity assessment bodies in the export country to perform conformity assessment at the expected level of the import country; and (ii) the knowledge of these bodies about the technical requirements and conformity assessment bodies in the import country. In this sense, MRAs recognise the competence of the designated body to carry out the assessment.

- **Transparency** including publication and exchange of information and notification requirements.

Harmonisation provisions in RTAs

The WTO TBT Agreement encourages harmonisation by requiring Members to use relevant international standards as the basis for their technical regulations and conformity assessment procedures, except when ineffective or inappropriate to achieve a legitimate objective. While RTAs typically incorporate the harmonisation provisions in the WTO TBT Agreement, they use slightly stronger formulations, and/or increase the costs of failing to harmonise technical regulations to the relevant international standards.

For instance, the USMCA requires Parties to consider each relevant international standard as a basis for designing technical regulations and conformity assessment procedures.[17] Moreover, the USMCA and EU-Japan EPA require a written explanation in situations where Parties reject an existing international standard that was brought to its attention as a basis for a technical regulation or conformity assessment.[18] Specifically, the EU-Japan EPA requires the Party that rejects an international standard to explain why it considers the international standard to be ineffective or inappropriate; to provide relevant information on which the assessment is based; and to identify exactly how the regulation or conformity assessment deviates from the international standard.[19] This increases the burden on the

[15] This description of mutual recognition is taken from Box 1 in the OECD report, "Contribution of Mutual Recognition to International Regulatory Co-operation" by Correia de Brito, Kauffmann and Pelkmans (2016[20]).

[16] OECD, p. 18.

[17] USMCA, Chapter 11 on Technical Barriers to Trade, Art. 11.5.3.

[18] USMCA, Chapter 11 on Technical Barriers to Trade, Art. 11.5.3(b).

[19] EU-Japan EPA, Chapter 7, Technical Barriers to Trade, Art. 7.6.3(b).

Parties to deviate from the relevant international standards. Moreover, the EU-Japan EPA requires a review of technical regulations, standards and conformity assessment procedures – preferably at intervals not exceeding five years – to increase convergence with relevant international standards.[20]

The EU-Japan EPA also explicitly encourages regional and national standardising bodies to participate in the preparation of international standards, and use relevant international standards as basis for the development of national standards.[21] However, it notes that there may be exceptions, including where an international standard is inappropriate because it provides "insufficient levels of protection or fundamental climatic or geographical factors or technical problems".[22] This language aims to ensure that harmonisation does not lead countries to adopt standards that are lower than they otherwise would have.

Another area where RTAs go beyond the harmonisation provisions in the WTO TBT Agreement concerns the identification of an international standard. Unlike the SPS Agreement, the WTO TBT Agreement does not list organisations that it considers to produce international standards. Rather, members are *encouraged* to determine the existence of international standard on the basis of the Decision of the Committee on Principles for the development of international standards, guides and recommendations with relation to Articles 2,5 and Annex 3 of the Agreement ("TBT Committee Decision on International Standards") (2002). By contrast, most RTAs examined in this report *require* Parties to use this TBT Committee Decision to determine the existence of an international standard, guide, or recommendation.

Different RTAs take different approaches to identifying international standards. For example, in the USMCA, the Parties agreed to use the TBT Committee Decisions for determining which standards are international. In contrast, the EU-Japan EPA lists international standard-setting bodies that issue standards that "shall be considered relevant international standards" by the Parties. Among the different standard setting bodies identified, the list makes explicit references to certain organisations that have developed some standards that are relevant to the environment.[23] These include:

- The United Nations Globally Harmonized System for Classification and Labelling of Chemicals: (USMCA, Annex on Chemical Substances; EU-Japan EPA);
- The International Civil Aviation Organization: (EU-Japan EPA): this body has created a standard that sets out aeroplane CO2 emissions Certification Standards;
- International Standards Organziation (ISO): (EU-Singapore FTA, Chapter on Renewables; EU-Japan EPA);
- The International Electrotechicnal Commission (IEC) (EU-Singapore FTA, Chapter on Renewables; EU-Japan EPA);

[20] EU-Japan EPA, Chapter 7, Technical Barriers to Trade, Art. 7.6.2 (d).

[21] EU-Japan EPA, Chapter 7, Technical Barriers to Trade, Arts. 7.6.4; 7.6.2(b).

[22] EU-Japan EPA, Chapter 7, Technical Barriers to Trade, Art. 7.6.2(b).

[23] It should be noted however, that at least some of the standard-setting bodies listed here, like the ISO, create so many standards that general references may not be sufficiently specific to advance harmonisation with environmental standards.

- The World Forum for Harmonisation of Vehicle Regulations (WP.29) within the framework of the United Nations Economic Commission for Europe (UNECE) (EU-Japan EPA, CETA).

From a sustainability perspective, harmonisation provisions can clearly contribute to the achievement of environmental objectives. A successful example is the case of China, Japan and Korea regulatory co-operation efforts to curb air pollution through, among other things, the adoption of the 2005 WHO Air Quality Guidelines as reference point for air quality and the Worldwide Harmonized Light Vehicles Test Procedure (WLTP) for emission standards from motor vehicles (Kauffmann and Saffirio, 2020[17]).

RTAs also encourage regional harmonization of standards between Parties to the agreement. For instance, where no international standard exists, the USMCA requires the Parties to consider whether a standard developed by a standardising body domiciled in one of the Parties could fulfil the legitimate objective.[24]

In practice, however, with the notable exception of the EU, regional harmonisation of regulations is more often the exception than the rule. This is because harmonising regulations between Parties presupposes a high level of economic integration and trust among regulators. It also requires the existence of relatively similar regulations to build upon. For example, regional harmonization may be possible in an area such as energy efficiency where more than 87 countries have already adopted comparable MEPS labels (Ecofys, 2014[18]), but may be much more difficult in areas such as resource efficiency and circular economy standards, which remain more heterogeneous.

Notwithstanding these challenges, sector-specific annexes provide examples of harmonisation of technical regulations with specific environmental standards. For instance, the USMCA sectoral annex to the TBT chapter on energy efficiency performance standards calls on the Parties to cooperate on energy performance standards and to "endeavour to harmonize" test procedures in eight years and energy performance standards in nine years after the entry into force of the Agreement. Similarly, CETA's Annex on Motor Vehicle Regulation notes that the Parties aim to develop harmonised standards in the context of new technologies. This will be elaborated on in the section on sector-specific annexes set out below.

Mutual recognition and equivalence

Mutual recognition and equivalence of regulations and the more targeted option of MRAs, represent another, slightly less ambitious, form of regulatory co-operation.

The TBT Agreement requires Members to "give positive consideration to accepting as equivalent technical regulations of other Members, even if these differ from their own, provided they fulfil the same regulatory objective".[25] Moreover, it requires Members to accept, whenever possible, the results of other Members' conformity assessment procedures.[26] Finally, the TBT Agreement encourages Members to enter into negotiation

[24] USMCA, Chapter 11 on Technical Barriers to Trade, Art. 11.5.4.

[25] TBT Agreement, Art. 2.7.

[26] TBT Agreement, Art. 6.1.

of mutual recognition agreements (MRAs) with respect to conformity assessment procedures.[27]

From the RTAs reviewed for this report, a number of them go beyond the MRA provisions in the WTO TBT Agreement by encouraging mutual recognition of *technical regulations* the most ambitious form of MRA as it is possible only if the regulatory objectives are considered equivalent. For instance, CETA provides that Parties that want a technical regulation to be recognised as equivalent shall make such a request in writing and explain the reasons why it considers the regulation to be equivalent. Moreover, CETA and the New Zealand – Singapore CEP both require that Parties that reject an equivalence request must, upon request by the other Party, explain the reasons for not accepting the regulations as equivalent.[28]

The New Zealand – Singapore CEP uniquely encourages Parties to recognise each other's *standards* as equivalent, providing that: "if regulatory compliance is required and if there is equivalence of outcomes, each Party shall give positive consideration to accepting the standards of the other Party as equivalent to its own corresponding standards".[29]

As with regional harmonisation, however, mutual recognition or equivalence of technical regulations requires deep levels of trust between regulators. As a result, there are relatively few cases of mutual recognition or equivalence of the technical regulations themselves. Exceptions include the 1996 Trans-Tasman agreement between Australia and New Zealand or 2002 EU-Switzerland MRA which involve equivalence of standards and technical regulations in 20 different sectors (Sugathan, 2016[19]).

In practice most mutual recognition come in the form of mutual recognition agreement of conformity assessment procedures (MRA), which are limited to enabling accredited test and inspection reports and certificates of compliance issued in the exporting country to be accepted by the importing Party.

RTAs encourage these MRAs by including general and/or specific provisions under which Parties recognise the other Party's conformity assessment results generally, or with respect to a specific product.[30] Most RTAs analysed in this report (e.g. Singapore-New Zealand CEP, CPTPP, Pacific Alliance, USMCA) also require that Parties provide an explanation when refusing to recognise the other Party's conformity assessments as equivalent and require that Parties apply national treatment to conformity assessments conducted by other Parties. Finally, several RTAs (USMCA, CPTPP, New Zealand – Singapore CEP, the Pacific Alliance and the EU-Japan EPA) contain additional options for Parties to facilitate acceptance of conformity assessment procedures, including: (a) voluntary agreements between conformity assessment bodies; (b) a supplier's declaration of conformity; (c)

[27] TBT Agreement, Art. 6.3.

[28] CETA, Art. 4.4; New Zealand – Singapore CEP, Art. 6.9.

[29] New Zealand – Singapore CEP, Art. 6.9.

[30] For instance, the New Zealand- Singapore CEP contains both a general MRA and a specific MRA for medical products. CETA includes a Protocol on Mutual Acceptance of Conformity Results and a Protocol on Mutual Recognition and Enforcement programme regarding good manufacturing practices for pharmaceutical products. Under its Protocol on Mutual Acceptance of Conformity Results, Canada and the EU agree to accept each other's conformity assessment certificates for specific sectors, including electrical and electronic equipment, radio and telecommunications, toys, construction products machinery, measuring instruments, hot-water boilers, equipment machines, apparatus, equipment for outdoors, and recreational craft.

unilaterally recognising the results of a conformity assessment performed in another Party; (d) designating conformity assessment bodies; or (e) establishing MRAs. These provisions incentivise regulators to base such decisions on well-founded evaluations and involves a greater level of commitment from each Party.

Some MRAs in the RTAs reviewed in the process of this report cover products relevant to the environment. A good example can be found in the EU-Singapore FTA, which provides for the mutual acceptance of declarations of conformity for a set of clean technology products including wind turbines or photovoltaic cells. CETA also contains a Protocol on Mutual Acceptance of Conformity Results for a number of specific products, including those products typically required to comply with energy-efficiency requirements (e.g. electrical and electronic equipment, apparatus, hot-water boilers, and appliances for burning gaseous fuels (for possible future inclusion).

To recall, MRAs in the context of conformity assessments do not require the that the Parties alter or adapt any safety, health, environment and consumer protection objectives, nor are the Parties required to change any existing procedure for conformity assessment (Correia de Brito, Kauffmann and Pelkmans, 2016[20]). The environmental benefit of MRAs, therefore, does not result so much from enhanced environmental performances but rather from the trade facilitating effect of eliminating duplicative testing and certification or inspection. As illustrated by the EU-Singapore example, when equivalence procedures concern environmental goods, like renewable energy products, MRAs could advance environmental objectives by diffusing or scaling up of environmental technologies.

Transparency

Transparency provisions feature prominently in the TBT Agreement. It is also a key provision in many RTAs. TBT+ transparency provisions in RTAs mostly broaden the scope of the publication and notification requirements beyond what is already required under the WTO TBT agreement, and include provisions for stakeholder engagement at the development and design stage of the standards.

Significantly, a number of RTAs (e.g. CPTPP, USMCA, Pacific Alliance) include transparency provisions with respect to the *development* of technical regulations, standards, or conformity assessments.

In contrast to transparency provisions in the WTO TBT Agreement, which require the publication of only a subset of technical regulations, many RTAs reviewed for this report require Parties to publish all proposals and final regulations for new technical regulations and conformity assessments of central bodies, and amendments to existing rules and final provisions, preferably by electronic means, and to notify these according to the relevant multilateral TBT provisions. Moreover, RTAs go beyond the transparency provisions in the TBT Agreement by requiring Parties to follow the transparency procedures set out in TBT Articles 2.9 and 5.6[31] not only when technical regulations and conformity assessments are not based on international standards, but also for these that are based on international standards and may have a significant effect on trade.

A number of RTAs reviewed for this report, including the CPTPP and the USMCA, reflect developments at the multilateral level by encouraging the Parties to use relevant guidance in the TBT Committee Decision and Recommendations, in determining whether a technical

[31] These two TBT provisions set out transparency obligations.

regulation or conformity assessment has a significant effect on trade. These principles are not mandatory at the multilateral level.

The New-Zealand-Singapore CEP notification provisions require Parties to include in the notice the objective of the proposal and the rationale for the approach the Party is proposing. CETA requires each Party to publish or make publicly available its response or a summary of its responses to significant comments it receives, no later than the date it publishes the adopted technical regulation or conformity assessment procedures. Finally, a number of RTAs, such as the CPTPP and the USMCA, require that a Party must notify its proposed measure to the other Party at the same time as it notifies WTO Members. This provision ensures that all Parties are informed at the same time.

Other transparency provisions in RTA's TBT chapters specify comments periods for drafts of proposed technical regulations and conformity assessments, and/or specify the period of time between the publication/adoption of a technical regulation and conformity procedures and the time it enters into force.

From a sustainability perspective, enhanced transparency can benefit the environment, for example, through the exchange of relevant information and scientific data to enhance the quality of regulations in addressing environmental concerns. Besides horizontal provisions, several RTAs also include more advanced mechanisms for exchange of information in specific sectors including environment or health related areas. These are covered in the section below on product and sector-specific annexes.

An overview of TBT + provisions in RTAs related to international regulatory co-operation is compiled in Table 2.

Table 2. Overview of horizontal TBT+ provisions in RTAs

	WTO provisions	Horizontal WTO + provisions in RTAs	Explicit references to the environment
Harmonisation	• International standards as basis for **technical regulation** (with exceptions) • Ensure that **standard-setting bodies** comply with Code of Good Practices	• **International standard**: There are different approaches to international standards in RTAs. Some mandate the use of the TBT Committee Decision, others identify specific standard-setting bodies • **Written explanation** for rejection of international standards • **Requirement to consider standards adopted by other Parties** • **Review** at 5-year intervals for technical regulations, standards and conformity assessments.	• **EU-Japan EPA:** Provides list of standard-setting bodies whose standards should be considered as international standards by the Parties. Some are relevant to the environment • **EU-Japan EPA:** Parties may deviate from international standard if the standard offers "insufficient levels of protection or fundamental climatic or geographical factors or technical problems".
Equivalence & Mutual Recognition	• Give positive consideration to accepting as equivalent other Members' **technical regulations** • Accept, when possible, results of **conformity assessments** • Encourages MRAs	• **More detail/requirements** for acceptance of conformity assessment results • **More options** to facilitate acceptance of conformity assessment results • **Requires national treatment for conformity assessment bodies.**	• **CETA**: MRA on products with environmental relevance e.g. electrical and electronic equipment, machinery, hot-water boilers, apparatus, (and appliances burning gaseous fuels for possible future inclusion)
Transparency	Publication requirements for technical regulations/ conformity assessments not based on international standards	• **Enhanced stakeholder involvement:** development of technical regulations, standards, conformity assessment procedures • **Enhanced publication requirements:** (all versus subset of laws; publish responses to significant comments received)	None

Source: Authors based on referenced agreements.

WTO extra provisions in RTAs related to GRP and IRC

This section looks at WTO extra provisions in RTAs and, where appropriate, highlights their environmental relevance. These provisions mainly refer to disciplines dealing with good regulatory practices (GRP) and international regulatory co-operation provisions (IRC) which don't have a WTO equivalent. Specifically, the provisions covered in this report are:

- **The creation of GRP/IRC specialised bodies:** some RTAs provide an overall institutional framework to promote good regulatory practices and enhanced regulatory co-operation among Parties.

- **Regulatory impact assessment (RIA):** The process of identifying and quantifying benefits and costs likely to flow from regulatory or non-regulatory options for a policy under consideration. An RIA may be based on benefit-cost analysis, cost-effectiveness analysis, business impact analysis etc.
- **Ex-Post regulatory evaluation:** The process of assessing the effectiveness of policies and regulations once they are in force. It can be the final stage when new policies or regulations have been introduced and it is intended to know the extent of which they met the goals they served for.
- **Stakeholder engagement:** The process by which the government engages all interested Parties in the preparation and evaluations of regulations.

As noted above, the TBT Agreement does not directly set out a framework for good regulatory practices. However, Members reaffirmed the importance of GRP, and in 2012 the TBT Committee meeting, identified a non-exhaustive list of voluntary mechanisms and related principles of GRP.[32]

Many RTAs have incorporated these principles in their TBT chapters to cover technical regulations, standards, and conformity assessments, or in horizontal, stand-alone chapters, covering a broader range of regulations (see Table 3). For instance, CETA's Chapter on Regulatory Co-operation explains that it applies to the "development, review and methodological aspects of regulatory measures of the Parties' regulatory authorities that are covered by, among others, the TBT Agreement, the SPS Agreement, the GATS".[33]

[32] WTO, Decisions and Recommendations adopted by the WTO Committee on Technical Barriers to Trade since 1 January 1995 (G/TBT/1/Rev.12). 21 January 2015.

[33] It further highlights that it covers CETA Chapters four (TBT), five (SPS), Nine (Cross-border trade in services), twenty-two (trade and sustainable development), twenty-three (trade and labour), and twenty four (trade and the environment).

Table 3. Overview of horizontal GRP/IRC chapters in recent trade agreements

	Pacific Alliance	CETA	CPTPP	USMCA	NZ-Singapore	EU-Japan EPA
Parties	Chile, Colombia, Mexico, Peru	Canada, EU	Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, Vietnam	Canada, Mexico, US	New Zealand, Singapore	EU, Japan
Signature date	10 Feb. 2015	30 Oct. 2016	8 March 2018	30 Nov. 2018	Pending	17 July 2018
Entry into force	1 May 2016	21 Sept. 2017	30 Dec. 2018	1 July 2020	Not yet in force	1 Feb. 2019
Name of horizontal GRP/IRC Chapter	Regulatory improvement (mejora regulatoria)	Regulatory Cooperation	Regulatory Coherence	Good Regulatory Practices	Regulatory Cooperation	Good regulatory practices and regulatory cooperation
GRP horizontal chapter	X		X	X		X
IRC horizontal chapter		X			X	X
Sectoral annexes	X	X		X		X
Establishment of special GRP/IRC body	X	X	X	X		X
Stakeholder consultation on GRP/IRC chapter	X	X	X	X		X
Coverage of GRP/IRC Chapter under disputes settlement provisions		X		X		
GRP/IRC Chapter Implementation monitoring	X		X	X		
GRP/IRC Chapter review mechanism	X		X	X		

Source: Based on Kauffmann and Saffirio (2020, forthcoming[21]).

Creation of GRP/IRC specialised bodies

The horizontal chapters of five of the RTAs analysed in this report call for the creation of a standing body responsible for overseeing the implementation of the chapter or providing a platform to support regulatory co-operation (Kauffmann and Saffirio, 2020[17]).[34] The establishment of these bodies signals the importance Parties attach to ongoing collaboration and to stakeholder participation (Kauffmann and Saffirio, 2020[17]).

The chapters provide details about the purpose and the functions that these specialised bodies should undertake, and the frequency of meetings to be held. Different RTAs define the purpose slightly differently. For the special bodies to be established under the Pacific Alliance and the CPTPP, the purpose is to oversee the implementation of the Chapter on Regulatory Co-operation and identify future priorities for co-operation. Under CETA, the special body aims to facilitate and promote regulatory co-operation between Canada and the EU, whereas the objective of the special body under the USMCA is to enhance communication and collaboration among Parties – including encouraging regulatory compatibility and regulatory co-operation – with a view to facilitating trade. The Committee on Regulatory Co-operation envisioned under the EU-Japan EPA aims to "enhance and promote good regulatory practices and regulatory co-operation between the Parties".[35]

The functions that these special bodies are envisioned to carry out also vary. For instance, the special bodies under the CPTPP, Pacific Alliance and USMCA are envisioned to monitor the implementation and operation of commitments under the RTA (Kauffmann and Saffirio, 2020, forthcoming[21]). Other functions include identifying additional priorities for regulatory co-operation. The USCMA Committee will also carry out additional functions, such as consulting in advance of meetings in international fora on issues related to the chapters and considering suggestions from stakeholders in this context (Kauffmann and Saffirio, 2020, forthcoming[21]).

The Regulatory Co-operation Forum created under CETA and the Committee on Regulatory Co-operation under the EU-Japan EPA predominantly focus on strengthening regulatory co-operation between the Parties. Specifically, they aim to provide a forum to discuss regulatory policy issues, review regulatory initiatives with potential for co-operation, assist and support regulators to identify partners for collaborations and to promote bilateral activities (Kauffmann and Saffirio, 2020, forthcoming[21]).

The environmental relevance of such provisions is rather ambiguous not least because these institutional arrangements are mostly procedural in nature. The activities they envisage are largely open-ended and no specific outcome is mandated, nor are the Parties obliged to engage in new activities of regulatory co-operation.

That said, the Parties usually reaffirm their commitment to ensure high levels of protection for human, animal and plant life or health, and the environment. Some RTAs (e.g. CETA, USMCA, EU-Japan) also lists the protection of the environment as one of the specific objectives of regulatory co-operation. These provisions often complement other chapters in RTAs that recognise the right of Parties to regulate in environmental matters, an obligation not to waive or derogate from existing environmental laws, and an overall

[34] To date, only CETA's Regulatory Co-operation Forum is operational.

[35] EU-Japan EPA, Article 18.14.

commitment to ensure that those laws and policies provide for, and encourage high levels of environmental protection.

For instance, CETA's chapter on Regulatory Co-operation chapter lists as one of its key principles: "ensuring high levels of protection… [of] the environment". It further notes that the objectives of regulatory cooperating include: "(a) contribute to the protection of human life, health or safety, animal or plant life or health and the environment by: (i) levering international resources in areas such as research, pre-market review and risk analysis to address import regulatory issues of local, national and international concern; and (ii) contributing to the base of information used by regulatory departments to identify, assess and manage risks." With respect to regulatory co-operation activities, it lists conducting cooperative research agendas, including in order to "minimise unnecessary differences in new regulatory proposals while more effectively improving health, safety and environmental protection".

The USMCA's chapter on GRP includes, in the definition of "regulatory co-operation" any effort between two or more Parties "to prevent, reduce or eliminate unnecessary regulatory differences to facilitate trade and promote economic growth, while maintaining or enhancing standards of public health and safety and environmental protection." It further notes that implementing government-wide practices to promote regulatory quality "can facilitate trade, while contributing to each Party's ability to achieve its public policy objectives (including health, safety and environmental goals)." Moreover, it notes that nothing in the chapter should prevent Parties from pursuing public policy objectives, including environmental goals, at the levels it considers to be appropriate.

Similarly, the Regulatory Co-operation Chapter in the EU-Japan FTA notes that the objectives of the chapter are to promote good regulatory practices and regulatory co-operation with the aim of enhancing bilateral trade and investment, but that "nothing in this Section shall affect the right of a Party to define or regulate its own levels of protection in pursuit or furtherance of its public policy objectives in areas such as … (b) human, animal and plant life and health; and (e) the environment including climate change".

While references to the right to regulate and the voluntary nature of regulatory co-operation seem to address concerns over negative impacts on environmental protection, critics point to a general bias towards trade facilitation in such institutional set ups. They argue that regulatory co-operation as envisaged under CETA, for example, is not designed to improve environmental protection through better standards and regulation but only to avoid unnecessary barriers to trade (Meyer-Ohlendorf, Gerstetter and Bach, 2016[22]).

The extent to which enhanced regulatory co-operation would lead to better or worse environmental outcomes is largely an empirical question and most of the RTAs analysed here have entered into force too recently to assess their impact. Insights can be found, however, in earlier efforts at promoting regulatory co-operation such as the Canada-U.S. Regulatory Co-operation Council's (RCC) launched in 2011 to reduce unnecessary differences between their regulatory frameworks, by bringing together regulators with health, safety, and environmental protection mandates. The Council provides a forum for stakeholders, including industry, consumers, and non-government organisations, to discuss regulatory barriers and identify opportunities for regulatory co-operation between the United States and Canada in areas such as food safety, agricultural methods, road and rail safety, workplace chemicals labelling, air quality or emissions from locomotives.

Among the success stories is Canada's efforts to align its energy efficiency standards for refrigerators, air conditioners and other appliances to the higher standards prevailing in the

US - a move which will save Canadians about $1.8 billion in energy costs by 2030, and manufacturers about $1.5 million per year.36 Similarly, through its new Locomotive Emissions Regulations, Canada will align to U.S. Rule for Emissions Standards for Locomotives and Locomotive Engines which will significantly reduce the amount of harmful air pollutants including nitrogen oxides and particulate matter allowed from trains.37 While these example suggest positive environmental impacts, it is worth noting that there has not been any comprehensive environmental assessment of the results of such regulatory co-operation initiatives. Civil society organisations have also expressed concerns about the deregulatory objectives of some cross-border working groups organised under the RCC (Trew, 2019[23]).

Regulatory impact assessment

Regulatory impact assessments (RIAs) are a key tool to improve regulatory quality. Specifically, they help governments advance towards evidence-based policy-making by allowing regulators to examine and measure the likely benefits, costs and effects of laws and regulations and assess alternative options (Kauffmann and Saffirio, 2020, forthcoming[21]). The 2018 Regulatory Policy Outlook find that it has become an important step in the rulemaking of most countries (OECD, 2018[24]).

The USMCA, CPTPP, the Pacific Alliance and the EU-Japan EPA all include provisions that promote regulatory impact assessment of regulations. For instance, the USMCA provides that Parties "should encourage the use of regulatory impact assessments in appropriate circumstances when developing proposed regulations that have anticipated costs or impacts exceeding certain thresholds established by the Party".[38] Similarly, the CPTPP provides that "to assist in designing a measure to best achieve a Party's objective, each Party should generally encourage relevant regulatory agencies, consistent with its laws and regulations, to conduct regulatory impact assessments when developing proposed covered regulatory measures that exceed a threshold of economic impact…".[39]

CETA does not contain a substantive provision on RIA, probably because the European Union and Canada routinely undertake these assessments (Kauffmann and Saffirio, 2020, forthcoming[21]). However, it encourages the Parties to conduct joint or concurrent RIAs as one option for Parties to consider minimising regulatory divergence. Other options listed are harmonisation, equivalence, and mutual recognition.[40]

From a sustainability perspective, an RIA is an important element of an evidence-based approach to policymaking and a potentially powerful tool to weigh in the environmental impact of a regulation with economic benefits. The environmental benefit will nonetheless depend on the extent to which this specific dimension is addressed in the regulatory assessment. At the domestic level, several countries have already introduced specific requirements in their RIA systems for an assessment of environmental impacts - with a

[36] See the Treasury Board of Canada Secretariat, https://www.canada.ca/en/treasury-board-secretariat/services/regulatory-co-operation/learn-about-regulatory-co-operation.html#curcc

[37] Ibid.

[38] USMCA Article 28.11, Regulatory Impact Assessment.

[39] CPTPP, Article 25.5.

[40] CETA, 21.4 (g).

particular focus on carbon emission -or, in a broader perspective, of impacts on sustainability (OECD, 2011[25]).

Similarly, some RTAs specifically reference the environment as a factor to consider when conducting impact assessments. For instance, under the USMCA, an RIA should consider "benefits and costs of the selected and other feasible alternatives, including the relevant impacts (such as economic, social, environmental, public health, and safety effects).[41] The EU-Japan EPA similarly notes that when carrying out an RIA, Parties must take into account "to the extent possible and relevant, the potential social, economic and environmental impact of those alternatives…".[42] It further integrates harmonisation principles, requiring to consider how the options relate to the relevant international standards, including reasons for divergence.[43]

Ex-post evaluation

All horizontal chapters in RTAs covered in this report, except for NZ-Singapore CEP and EU-Singapore FTA, encourage Parties to evaluate whether the regulations that have been adopted achieve their stated objectives (Kauffmann and Saffirio, 2020, forthcoming[21]). As noted in Kauffmann and Saffirio (2020, forthcoming[21]), different RTAs take slightly different approaches to evaluating existing regulations. For instance, the CPTPP, and the Pacific Alliance have adopted a very broad approach, merely calling Parties to review relevant regulatory measures: the CPTPP provides that "each Party should review, at intervals it deems appropriate, its covered regulatory measures to determine whether specific regulatory measures it has implemented should be modified, streamlined or repealed as to make the Party's regulatory regime more effective in achieving the Party's policy objectives".[44] The Pacific Alliance Chapter contains similar language and gives Parties a lot of leeway as to the frequency of when to conduct reviews, as well as the methodology they use (Kauffmann and Saffirio, 2020, forthcoming[21]).

Other RTAs, including USMCA and EU-Japan FTA, contain provisions that are more stringent. For instance, the EU-Japan FTA contains retrospective evaluation provision provides that "the regulatory authority of each Party shall maintain processes and mechanisms to promote retrospective evaluation of regulatory measures in force".[45] It further notes that the regulatory authority of each Party shall make publicly available its plans for, and results of, such retrospective evaluations. Similarly, the USMCA requires Parties "to adopt or maintain procedures or mechanisms to conduct retrospective reviews of its regulations in order to determine whether modification or repeal is appropriate".[46]

CETA and USMCA also approach ex-post evaluation as a vehicle to promote co-operation (Kauffmann and Saffirio, 2020, forthcoming[21]). For instance, CETA encourages the Parties to compare the methods and assumptions used in conducting ex-post evaluations, whereas the USMCA notes that periodically exchanging information on post-

41 USMCA, Art. 28.11.

42 EU-Japan EPA, Art. 18.8.2(c).

43 EU-Japan EPA, Art. 18.8.2(d).

44 CPTPP Article 25.5 on Implementation of Core Good Regulatory Practices.

45 EU-Japan FTA, Art. 18.9.

46 USMCA, Article 28.13.

implementation reviews of regulations could lead to minimising regulatory divergences (Kauffmann and Saffirio, 2020, forthcoming[21]).

From an environmental perspective, *ex-post* evaluation can ensure that unexpected environmental impact of a regulation is captured and reflected in the revision process. In practice however, this tool remains under-exploited and most ex-post assessment tend to focus on the administrative burden and the cost of compliance instead of assessing the actual effectiveness or consequences of a particular technical regulation (Basedow and Kauffmann, 2016[26]). In other words, ex-post evaluations rarely assess the trade impact, let alone the environmental consequences of a particular regulation. Examples of international co-operation in the environmental field exist nonetheless as illustrated by the 2009 initiative by Australia and New Zealand to conduct a cross-jurisdictional ex-post evaluation of their respective food safety regulation to remove unnecessary duplications, inconsistencies and compliance costs.

The USMCA provides a list of formal requirements that must be followed in conducting *ex-post* evaluations, including the types of considerations to take into account. Specifically, it notes that in conducting a retrospective review, the Parties shall, inter alia, focus on whether the regulation is effective "in meeting its initial stated objectives, for example by examining its actual social or economic impacts." It does not, however, specifically reference the environment.

Similar to RIA, RTA chapters on good regulatory practices could arguably advance environmental objectives by providing a structure, and the political commitment. Explicit references to the environment as a factor to take into account could led Parties to consider the environment more seriously in engaging in RIAs and ex-post evaluations. This would be particularly important in situations that create environmental externalities, such as CO2 emissions, or the risk of chemical pollution.

Stakeholder engagement

As noted above, the TBT chapters in most RTAs reviewed for this report contain transparency provisions that go beyond the transparency provisions of the WTO TBT Agreement. All the horizontal chapters analysed in this report contain provisions on stakeholder engagement in the rulemaking process. However, different RTAs have adopted different approaches: the CPTPP and Pacific Alliance affirm the importance of consultations with interested Parties in the development of regulatory measures, whereas USMCA details substantive practices to enhance stakeholder involvement. While they do not go as far as requiring Parties to inform the public of forthcoming consultations, the CPTPP, Pacific Alliance, and USMCA contain requirements regarding forward planning through the publication of an annual list of regulations a country plans to adopt (Kauffmann and Saffirio, 2020, forthcoming[21]).

For instance, the USMCA sets out a number of processes Parties must follow to ensure stakeholder engagement during the development of regulations (Kauffmann and Saffirio, 2020, forthcoming[21]). These include:[47]

- Public access to regulations and RIA, if applicable, before their finalisation;
- A written comment period for domestic and foreign stakeholders;

[47] USMCA, Art. 28.9.

- Availability of website for submission of comments;
- Publication of written comments received; and
- Publication of the regulatory authority's feedback on substantive issues raised during the consultation stage.

From an environmental perspective, engaging relevant stakeholders including business, civil society, consumers or international trading partners who are concerned and affected by the regulation at issue is fundamental to improve the quality of regulations and limit its environmental impact (OECD, 2018[24]). At the international level, it allows trading partners to raise potential concerns early in the process, avoid subsequent tensions and correct unintended consequences during ex-post evaluations.

As highlighted in section 3, in the WTO, TBT measures with environmental protection as stated objectives seem to be proportionately subject to more specific trade concerns than measures taken for other purposes. This may be in part because of a lack of engagement with foreign stakeholders at an early enough stage. Foreign stakeholders are likely to raise awareness of different regulatory approaches in other jurisdiction, highlight potential unintended consequences and provide information about the costs of regulatory divergence (Basedow and Kauffmann, 2016[26]).

By bringing in different perspectives including civil society or specific scientific expertise, stakeholder engagement can also lead to a better understanding of sustainability concerns and generate environmental benefits. CETA, for example, states that Parties may consult with stakeholders and interested Parties, including representatives from academia, think tanks, non-governmental organisations, businesses, consumers and other organisations. Article 28.10 of the USMCA envisages the possibility to create expert groups or bodies including non-governmental persons representing a variety of interests, to provide advice of a scientific or technical nature in the development or implementation of a particular regulation.

At the same time, the internationalisation of the regulatory process through foreign stakeholder engagement has raised questions of legitimacy and accountability. Critics point to the fact that stakeholder engagement often lacks inclusiveness and is vulnerable to regulatory capture by large corporate players. According to some, they may function as backdoor for lobbyists of multinational companies, which have the capacity to engage in consultations outside of their domestic base and exercise undue influence over domestic regulatory process (Basedow and Kauffmann, 2016[26]). Similarly, others fear that stakeholder engagement in RTAs may be biased in favour of reducing trade obstacles and may result in lower environmental standards or a race to the bottom (Trew, 2019[23]).

Table 4 provides an overview of horizontal WTO extra provisions in RTAs.

Table 4. Overview of horizontal WTO extra provisions in RTAs

GRP Principle	Examples in RTAs	Examples of references to the environment
Institutional setup for regulatory co-operation	• **CPTPP/Pacific Alliance**: Encouragement to develop central coordinating body to facilities effective inter-agency coordination and provide oversight • **USMCA/CPTPP/CETA**: Committee to facilitate ongoing regulatory co-operation	• **CETA**: "ensuring high levels of protection… [of] the environment" as one of the principles of regulatory co-operation. • **USMCA**: "nothing […] should prevent Parties from pursuing public policy objectives, including environmental goals, …"
Regulatory Impact Assessment (RIA)	• **CPTPP**: encourage RIA, consider need for regulation, explain how objectives are achieved, rely on best existing information • **USMCA**: carry out risk assessment on major technical regulations • **EU-Japan**: endeavour to carry out RIA on major regulatory measures. Environment important factor to take into account	• **USMCA**: RIA should consider "benefits and costs of the selected and other feasible alternatives, including the relevant impacts (such as economic, social, environmental, public health, and safety effects).[48] • **EU-Japan EPA**: RIA should take into account "to the extent possible and relevant, the potential social, economic and environmental impact of those alternatives…".[49]
Ex-Post Evaluation	• **EU-Japan**: implement processes and mechanisms to promote periodic retrospective evaluation of regulatory measures • **USMCA**: conduct retrospective reviews to determine whether modification or repeal is appropriate. When a conducting a retrospective review, Parties shall consider, as appropriate, "the effectiveness of the regulation in meeting its initial stated objectives, for example by examining its actual social or economic impacts".[50]	None
Stakeholder Engagement	• **USMCA**: Ex ante consultations, websites for submission of comments, publication of written comments received and regulatory authority's feedback. • **EU-Japan; CETA**: Opportunity for non-governmental stakeholders to engage	None

Source: Authors based on referenced agreements.

[48] USMCA, Art. 28.11.

[49] EU-Japan EPA, Art. 18.8.2(c).

[50] USMCA, Art. 18.13.

Sector-specific annexes/chapters relevant to IRC

In addition to horizontal GRP and IRC provisions, most RTAs also include provisions relevant to specific products and/or sectors. These can take different forms: CPTPP, CETA and the New-Zealand Singapore CEP contain product and/or sector-specific IRC provisions set out in annexes to their TBT chapters; the USMCA contains sector-specific annexes set out in a Sectoral Annex; and the EU-Japan EPA contains sector-specific provisions on regulatory co-operation both embedded within its Chapter on Good Regulatory Practices and Regulatory Co-operation (Section B on Animal welfare) and in a separate regulatory co-operation chapter (Chapter 19 on the Co-operation in the Field of Agriculture). The EU-Singapore FTA contains a stand-alone chapter concerning sector-specific provisions. Finally, as noted earlier, a number of RTAs reviewed for this report also contain product-specific MRAs, including CETA and the New Zealand – Singapore TFA.

Most innovation to advance environmental objectives seems to be happening in the context of these product-specific annexes. As set out in Table 5 below, this report has identified seven annexes that either directly aim at achieving environmental objectives, or that could indirectly contribute to the environment. These include annexes on motor vehicle regulation (CETA), organic products (CPTPP), energy performance standard (USMCA), chemical substances (USMCA), standards for renewable energy generation (EU-Singapore), co-operation in the field of agriculture (EU-Japan), and animal welfare (EU-Japan).

Table 5. Overview of sector-specific annexes with an environmental focus

	CPTPP	CETA	USMCA	EU-Japan	EU-Singapore
Motor vehicle regulation		TBT Annex			
Organic Products	TBT Annex				
Energy Performance Standards			Sectoral Annex		
Chemical Substances			Sectoral Annex		
Co-operation in the Field of Agriculture				Chapter 19	
Animal Welfare				Incorporated in Chapter 18 on GRP	
Standards for the generation of energy from renewables					Stand-alone Chapter (Chapter 7, Art. 7.5)

Source: Authors based on referenced agreements.

The USMCA Annex on Chemical Substances notes that "the principal objective of regulating chemical substances and chemical mixtures is the protection of human health

and the environment". Similarly, CETA's Annex on Motor Vehicle … aims to "strengthen co-operation and communication, including exchange of information, on motor vehicle safety, and environmental performance…". The Singapore-EU FTA aims to "promot[e], develop […] and increase […] the generation of energy from renewable and sustainable non-fossil fuel sources, particularly through facilitating trade and investment…" (Art.7.1). The USMCA Annex on Energy Efficiency provides that co-operation on energy performance standards and related test procedures aims to "facilitate trade among the Parties and advance energy efficiency"

Enhancing regulatory compatibility

Most sector-specific annexes reviewed for this report contain some form of provision concerning regulatory compatibility. Some contain language that is quite broad, providing Parties with leeway to decide on how best to enhance regulatory compatibility. For instance, under the New Zealand - Singapore CEP annex on Electrical and Electronic Equipment, the Parties have options on how to enhance regulatory compatibility. Specifically, Parties agree to "implement the principles of mutual recognition, unilateral recognition or harmonisation that provide the most appropriate or cost-effective approach to the removal or reduction of technical, sanitary and phytosanitary barriers…".

Other annexes emphasise regulatory alignment through harmonisation. The USMCA Annex on Medical Devices provides that "the Parties shall seek to collaborate to improve the alignment of their respective regulations and regulatory activities for medical devices through work in relevant international initiatives…". Similarly, the CPTPP Annex on Cosmetics provides that "the Parties shall seek to collaborate through relevant international initiatives, […], to improve the alignment of their respective regulations and regulatory activities for cosmetic products." Moreover, it notes that when developing or implementing regulations for cosmetic products, each Party "shall consider relevant scientific or technical guidance developed through international collaborative efforts. Each Party is encouraged to consider regionally-developed scientific or technical guidance that are aligned with international efforts". Identical language can be found in CPTPP annexes on pharmaceuticals and medical devices.

The USMCA Annex on Energy Performance Standards is more specific about the goal of harmonizing energy performance standards or test procedure, providing that the "Parties shall endeavour to harmonize" test procedures and energy performance standards within an eight and nine-year time frame, respectively. The Annex also notes, in a footnote, that such harmonisation should not undermine energy efficiency objectives. When developing or modifying energy performance standards, the Parties should give due consideration to adopting energy performance standards and test procedures adopted by another Party, or industry standards developed by a standards development organisation accredited in the territory of the other Party.

Some annexes refer to specific international or regional standards. For instance, the Annex 12-A of the USMCA on Chemical Substances includes a list of specific ways in which the Parties may strengthen their co-operation on chemical substances and chemical mixtures. The potential area of co-operation includes the respective implementation of the United Nations Globally Harmonized System for Classification and Labelling of Chemicals (GHS). Other potential areas for co-operation include use and content of safety data sheets; compatibility of respective requirements for presentation of information; coordination and collaboration on chemical risk assessment, and, if appropriate, scientific criteria used for the reliability of scientific data underpinning regulatory decisions (12.A.4.6).

CETA's Annex on "Co-operation in the field of motor vehicle regulations" refers to the Parties' joint commitment to improve vehicle safety and environmental performance, and to the harmonisation efforts pursued under WP.29. Moreover, the Parties agree to "jointly encourage and promote greater international harmonisation of technical requirements through multilateral for a, such as the 1998 Global Agreement….". The Annex further notes that when a Party develops a new technical regulation for motor vehicles…it shall consider the technical regulations of the other Party, including those established under the framework of the UNECE World Forum for the Harmonization of Vehicle Regulation (WP.29). Interestingly, it also contains a provision requiring a determination whether an UN standard concerning vehicle safety should be incorporated in Canada's Motor Vehicle Safety Regulation. It notes that these technical regulations should be incorporated, unless doing so would provide for a lower level of safety than Canadian regulations or would compromise North American integration.

As mentioned above in the discussion on MRA, the EU-Singapore FTA's Chapter on renewable energy provides that "where international or regional standards exist with respect to products for the generation of energy from renewable and sustainable non-fossil sources, the Parties shall use those standards, or the relevant parts of those standards, as a basis for their technical regulations except when such international standards or relevant parts would be an ineffective or inappropriate means for the fulfilment of the legitimate objectives pursued." The Parties list more specifically the International Organization for Standardization (ISO) and the International Electro-technical Commission (IEC) as relevant standard-setting bodies.

Transparency and information exchange

A number of sector and product specific annexes include provisions to strengthen transparency and information-exchanges with respect to the product/sector at issue.

The EU-Japan EPA, which sets out provisions on animal welfare in its IRC chapter, provides that the Parties may adopt a working plan for priority areas to be dealt with, and establish an Animal Welfare Technical Working Group to exchange information, expertise and experiences regarding animal welfare.

CETA's Annex on Co-operation in the field of Motor Vehicle Regulations provides that the Parties shall endeavour to share information and cooperate in a number of specific areas, including, the development and establishment of technical standards, the post-implementation reviews of technical and related standards, the exchange of research, information and results linked to the development of new vehicle safety regulations. It further specifies that co-operation should take place through annual meetings, and through sharing and discussing research and development plans on motor vehicle safety and environmental technical regulations or related standards (Art.3).

Moreover, the USMCA sectoral annex on Chemical Substances includes provisions for the Parties to exchange, as appropriate, "scientific data and technical information, on new and emerging issues related to the management of chemical substances, with a view to accumulating the best available scientific data or technical information, including peer-reviewed studies".[51] Similarly, the EU-Singapore FTA sets out information exchange requirements regarding issues "any issues relevant for the implementation of this Chapter…" i.e. the Chapter on Non-Tariff Barriers to Trade and Investment in Renewable

[51] See Article 12.A.5: Data and Information Exchange.

Energy Generation". It specifically notes that the collaboration may include exchanging information, regulatory experiences and best practices in areas such as (i) the design and non-discriminatory implementation of measures promoting the update of energy from renewable sources; carbon capture and storage; smart grids; energy efficiency, and technical regulations, standards and conformity assessment procedures, such as those related to grid code requirements (Art. 7.7).

The CPTPP's chapter on Organic Products similarly encourages that the Parties exchange information on matters related to organic production, certification of organic products, and related control systems.

5. Possible approaches to advancing environmental objectives through TBT, IRC and GRP provisions in RTAs

As highlighted in previous sections, provisions applying to technical regulations, standards and conformity assessments are found both under TBT chapters and under dedicated chapters dealing with good regulatory practices or international regulatory co-operation. RTAs have taken a variety of approaches to advancing regulatory co-operation, ranging from harmonisation, mutual recognition or transparency, through RIA, ex-post evaluations and stakeholder engagements to sector-specific chapters or annexes.

The fact that many of these provisions do not refer specifically to the environment does not mean that they are not relevant from an environmental perspective. The duplicative or divergent nature of environmental regulations is often best addressed through horizontal provisions promoting better regulations, harmonisation based on international standards or mutual recognition of conformity assessment. In doing so, they foster regulatory coherence, encourage inter-operability of systems, and remove unnecessary barriers to trade among jurisdictions.

However, each of these provisions have limitations. Harmonisation often requires the existence of internationally recognised standards and only work bilaterally when countries have sufficient trust in each other's regulatory systems. Many of these provisions are also optional, leaving it to the Parties to decide where or when to implement good regulatory practices to advance environmental objectives.

More fundamentally, critics argue that the primary objective of RTA disciplines is to facilitate trade among Parties, not to improve the level of environmental protection (Meyer-Ohlendorf, Gerstetter and Bach, 2016[22]). Their environmental benefit would therefore only materialise in situations where enhanced trade contributes at the same time to the achievement of environmental objectives. For example, facilitating trade in environmental goods such as photovoltaic cells, wind turbines, energy efficient light bulbs or equipment for waste water treatment is likely to promote the diffusion and uptake of cleaner technologies. Similarly trade in waste, secondary materials or goods for refurbishment and remanufacturing can allow materials to be sorted, recycled or remanufactured in countries where effective treatment standards are in place, by exploiting comparative advantages and economies of scale.

Beyond those sectors, some warn that the trade facilitation bias in RTA provisions could lead to regulations converging towards less stringent environmental protection (Trew, 2019[23]), for example, if harmonisation, mutual recognition or equivalences are based on standards representing the lowest common denominator. Other fear that stakeholder engagements procedures could be captured by vested interests and lead to suboptimal outcomes from an environmental perspective. Applied to environmentally harmful industries, trade facilitation measures may even contribute to exacerbating the negative environmental externalities associated with increased demand for those goods.

In the absence of consistent empirical evidence to evaluate this risk – not least because most of the RTAs containing such provisions have only recently entered into force – a logical approach in the design of future RTAs should consist in maximising the opportunities provided by the type of win-win outcomes described above while minimising

the risks of suboptimal environmental outcomes. This may be achieved by complementing the horizontal disciplines with a set of more environment specific provisions.

Based on precedents and best practices identified in existing RTAs, this section suggests four areas where environment-specific provisions could complement horizontal disciplines dealing with technical barriers to trade and regulatory co-operation. More specifically these refer to provisions related to (a) the objectives and principles of regulatory co-operation, (b) good regulatory practices such as RIA and ex-post evaluation, (c) the outcome of international regulatory co-operation and (d) sectoral chapters or annexes.

Protecting the environment as one objective or principle of regulatory co-operation

A first step in addressing the concerns identified above could consist in incorporating the protection of the environment as one of the objectives or basic principles of enhanced regulatory co-operation. Many RTAs already reaffirm their commitment to ensuring high levels of environmental protection in dedicated chapters dealing with the environment or sustainable development, but examples of specific references in chapters dealing with IRC or GRP are more scarce. For example, CETA's regulatory co-operation chapter lists protection of the environment as one of the objectives of regulatory co-operation. Such provisions nonetheless state that this contribution is to be achieved by leveraging international resources in areas such as research, pre-market review, or risk analysis implying that the environmental benefit will result from the regulators having access to better information.

A reference to achieving environmental protection is found under USMCA's Sectoral Annex. Art. 12.A.4 Chemical Substances recognises that the "principal objective of regulating chemical substances and chemical mixtures is the protection of human health and the environment". Similar references in chapters dealing with good regulatory practices or international regulatory co-operation could help alleviate concerns regarding the motivations behind regulatory co-operation.

Integrating the environment in ex-ante and ex-post regulatory assessments

A second avenue to explore consists in incorporating, when relevant, environmental considerations in regulatory impact assessment or *ex post* evaluations of technical regulations, standards or conformity assessment procedures. As highlighted above, this is already the case in several OECD countries under their RIA systems but much less under *ex-post* evaluations (OECD, 2018[24]; 2011[25]; Basedow and Kauffmann, 2016[26]). Integrating such provisions in RTAs may provide a structure, the resources, and the political impetus to undertake systematically those assessments. In RTAs, precedents exist under the EU-Japan economic partnership agreement which provides that when carrying out a regulatory impact assessment, Parties will take into consideration "to the extent possible and relevant the potential social, economic and environmental impact" of different alternatives. This type of language could alleviate concerns that regulatory co-operation may results in lower environmental outcomes by providing opportunities for stakeholders to raise such concerns at an early stage or correct unintended consequences in the implementation phase.

Integrating non-regression clauses in international regulatory co-operation

A third avenue could consist in mirroring existing non-regression clauses already present in many environmental or sustainable development chapters in RTAs. For example, the CPTPP not only recognises the sovereign right of each Party to establish its own levels of domestic environmental protection, it also seeks to avoid a race to the bottom, by stating that "no Party shall fail to effectively enforce its environmental laws […] in a manner affecting trade or investment" or "waive or otherwise derogate from […] its environmental laws […] in order to encourage trade or investment".

In chapters dealing with TBT measures, good regulatory practices or regulatory co-operation most agreements reaffirm the right to regulate and pursue environmental objectives. For example, the USMCA's Chapter on Good Regulatory Practices provides that nothing in the chapter should prevent Parties from pursuing public policy objectives, including environmental goals, at the levels it considers to be appropriate. Similarly, the regulatory co-operation chapter in the EU-Japan RTA provides that "nothing in this Section shall affect the right of a Party to define or regulate its own levels of protection in pursuit or furtherance of its public policy objectives in areas such as (e) the environment including climate change". Such references are sometimes found in the trade and environment chapter as in the case of CETA with Article 24.3, which states that "The Parties recognize the right of each Party to set its environmental priorities, to establish its levels of environmental protection, and to adopt or modify its laws and policies accordingly and in a manner consistent with the multilateral environmental agreements to which it is Party and with this Agreement. Each Party shall seek to ensure that those laws and policies provide for and encourage high levels of environmental protection, and shall strive to continue to improve such laws and policies and their underlying levels of protection".

While these provisions forcefully reaffirm the right to pursue environmental objectives, they do not constitute non-regression clauses. Such an approach may however significantly contribute to alleviate concerns that regulatory co-operation could result in less stringent levels of environmental protections. Precedents exist, for example under the USMCA Sectoral Annex 12 on Energy-Efficiency Performance Standards, where footnote 9 notes that "successful efforts at harmonisation should not diminish consumer welfare, consumer protection, or energy efficiency objectives". Similar provisions may be envisaged under general chapters dealing with regulatory co-operation or under specific disciplines dealing with harmonisation or mutual recognition of regulations.

Promoting win-win opportunities through special provisions, sectoral chapters or annexes

While the three options listed above essentially aim to avoid situations where enhanced regulatory co-operation leads to lower levels of environmental protections, RTAs could also maximise opportunities where freer trade and environment benefits go hand in hand. This can be fostered through special provisions, dedicated chapters or sectoral annexes dealing either with a particular sector, or with a specific environmental problem.

RTAs studied in this report already contain sector-specific annexes that aim to enhance regulatory co-operation in products or sectors relevant to the environment, including Chemical Substances, Motor Vehicles, Energy Performance Standards, Organic Products, Animal Welfare, Agriculture, and Renewable Energy.

Such annexes can take the form of general commitments to exchange information,[52] to improve respective understanding,[53] or to cooperate towards a particular objective.[54] They enhance regulatory compatibility, either by giving Parties the choice to apply harmonisation, mutual recognition, or unilateral recognition. (New Zealand – Singapore CEP annex on Electrical and Electronic Equipment) or by committing Parties to cooperate on test procedures and performance standards to facilitate trade and advance energy efficiency (USMCA Sectoral Annex on Energy Performance Standards). As mentioned above, certain RTA even contain specific sectoral commitments as a result of the negotiations, as exemplified by the mutual acceptance of declarations of conformity established for a set of clean technology products in chapter 7 of the EU-Singapore FTA. This last example is also a case where the specific outcomes echo a more general commitment under the trade and sustainable development chapter to cooperate on a particular environmental challenge like climate change.

As the examples above show, sectoral approaches probably constitute the most direct way to promote the type of win-win situations referred to earlier. To further illustrate this point, the following sub-sections suggest possible way to deal with two specific environmental concerns namely resource efficiency and the transition to a circular economy, and energy efficiency.

The transition to a resource efficient, circular economy[55]

To address environmental concerns related to unsustainable patterns of consumption, a number of countries have started to adopt roadmaps towards a more resource efficient and circular economy.[56] Specifically, the circular economy aims to enhance resource efficiency

[52] See for example USMCA Sectoral Annex, Art. 12.A.5 on Chemical Substances stating that Parties shall exchange, as appropriate, "scientific data and technical information, on new and emerging issues related to the management of chemical substances…" or the EU Canada Administrative Arrangement on the exchange of information on the safety of non-food consumer product as a result of CETA.

[53] See for example the special provision on animal welfare in Art. 18.17 of the EU-Japan regulatory coherence chapter which provides that the Parties will "cooperate for their mutual benefit on matters of animal welfare with a focus on farmed animals with a view to improving the mutual understanding of their respective laws and regulations".

[54] See for example Art. 12.D.4 of the USMCA Sectoral Annex on Energy Efficiency Performance Standards which calls on the Parties to cooperate on energy performance standards and to "endeavour to harmonize" their respective standards and test procedures over a certain period of time.

[55] This section is based on OECD (2020, forthcoming[27]) "International Trade and the Circular Economy - Policy Alignment".

[56] The OECD (2020[40]) defines the circular economy as an economic system that (i) maximises the value of materials and products circulating in the economy; (ii) minimises material consumption, with a particular focus on virgin materials, toxic and hazardous substances, and specific waste streams; (iii) prevents waste generation; (iv) reduces hazardous components in products and waste. Previous OECD work has identified three mechanisms that improve the circularity of an economy: closing material flows (i.e. recovering materials from waste streams for recycling or reuse), slowing material flows (i.e. keeping materials and products in the economy for longer), and narrowing material flows (i.e. using resources materials and products more efficiently) (McCarthy, Dellink and Bibas, 2018[41]). Taking this broad view, the circular economy concept is complementary to resource efficiency and sustainable materials management approaches.

by reducing the environmental impacts associated with the whole life cycle of finite material resources and decoupling growth from economic outputs. This is usually achieved by extending products' lifetime, enhancing recyclability and promoting more efficient use of resources and finite products (OECD, 2020, forthcoming[27]).

The transition towards a resource efficient circular economy has important linkages to international trade, including through trade in waste and scrap, secondary raw materials, and goods for refurbishment and remanufacturing and second-hand goods (OECD, 2020, forthcoming[27]). A key challenge in the emergence of resource efficiency and the circular economy is the lack of international collaboration. Most resource efficiency and circular initiatives are adopted at the national level. This is problematic because (i) one country's standard related to resource efficiency and the circular economy could be undermined by another' country's standard; and (ii) these standards could serve as a barrier to trade for certain goods (e.g. primary and secondary raw materials, waste and scrap, and second-hand goods) (Yamaguchi, 2018[3]). Moreover, regulatory alignment is particularly important in the context of resource efficiency and the circular economy, given the difficulty to differentiate between various categories of products related to an extended product life cycle.

As set out above, countries have various options to facilitate trade in products relevant to resource efficiency and the circular economy through RTAs. These options range from harmonisation and establishing regulatory equivalence to consultation, exchange of information and the application of due process in the crafting of regulations.

Efforts in promoting a resource efficient circular economy are likely to benefit from horizontal disciplines on GRP and IRC. The most direct approach would probably consist in including a resource efficiency and circular economy sectoral annex (similar in structure/form to the Sectoral Annex on Energy Performance Standards in the USMCA), or a stand-alone chapter (similar in structure/form to the Renewable Energy Chapter in EU-Singapore FTA).

Most resource efficiency and circular economy measures are adopted at a national level. As a result, and given that the circular economy is a relatively new concept, there exist relatively few international standards related to resource efficiency and the circular economy. However some international organisations are in the process of filling this gap.

Anticipating any further developments in this context, countries could consider including language in their RTAs that they would follow international standards relevant to resource efficiency and the circular economy, where they exist, except where doing so would be ineffective or inappropriate to fulfil a legitimate objective.

In addition, and/or alternatively, countries could consider provisions through which Parties shall "endeavour to harmonise" or "recognise as equivalent" a number of specific upstream and downstream circular economy standards and test procedures – ideally within a specific timeframe. For instance, this could cover upstream standards related to product management and design, such as material content standards and recycled content standards (e.g. eco-design or extended producer responsibility schemes (EPR) or downstream standards, such as standards related to material quality of secondary raw materials and product quality standards for refurbished, remanufactured and second-hand goods (OECD, 2020, forthcoming[27]).

As the circular economy is an emerging and developing concept, countries may also want to consider including language focused on "developing or modifying" resource efficiency and circular economy-related standards or test procedures. Similar to the Sectoral Annex

on Energy Performance Standards set out in the USMCA, Parties could consider language noting that when developing or modifying standards, Parties shall give "due consideration" to adopting the standards and test procedures adopted by the other Party/industry standards developed by a standards development organisation accredited in the territory of another Party.

Resource efficiency and circular economy annexes in RTAs could also address issues related to classification of waste. For instance, one of the issues in this context concerns that the 6-digit HS code used to classify products does not distinguish between secondary raw materials from waste and scrap (OECD, 2020, forthcoming[27]). Countries involved in negotiating RTAs could agree on 8 or 10-digit HS codes that would enable them to make this differentiation (OECD, 2020, forthcoming[27]). A similar issue concerns difficulty differentiating between waste and second-hand goods. While the HS code distinguishes between goods in used conditions and waste, visually it is difficult to differentiate between the two, which makes enforcing this very difficult. Countries could agree, in their RTAs, to only classify something as "second-hand good" if it meets the agreed-upon quality standard (Van der Ven, 2020[28]). While this conflates standards with classification, it is an idea that could be further explored.

Another key element that can be addressed in RTAs concerns labelling schemes. In the context of the circular economy, such schemes exhibit the product's durability, reparability, upgradeability, or quality (if second-hand), or inform consumers of downstream requirements related to recycling. While these labelling schemes are often voluntary – and thus, except from the obligations under the TBT Agreement – they can create compliance costs for producers (Prag, Lyon and Russillo, 2016[29]). Countries could use RTAs to promote co-operation in the context of voluntary labelling schemes concerning the circular economy. The language in the USMCA Annex on Energy Performance Standards concerning "Voluntary Approaches to Promote Energy Efficiency" may serve as a useful starting point. Specifically, under the USMCA Annex, the Parties recognise that voluntary programs and voluntary mechanisms to promote energy efficiency should be open, transparent, maximise consumer benefits, and avoid creating unnecessary barriers to trade. Another interesting example is set out in the CPTPP Annex on Organic Labelling. They further agree to facilitate compatibility of voluntary programs and mechanisms. Likewise, countries could include language in their circular economic annexes agreeing to cooperate to facilitate greater transparency and compatibility among voluntary labelling schemes relevant to the circular economy.

Some of these proposed provisions will be quite ambitious. Indeed, as mentioned above, regional harmonisation requires trust, in addition to the existence of sufficiently similar regulations. Regulation towards a more resource efficient and circular economy is emerging as a field that is dominated by national players, each of which are adopting standards that are far from identical. In this regard, countries may want to consider less ambitious options and focus on mutual recognition agreements for test procedures relevant to complying with circular economy standards. Countries could also include co-operation provisions specific to issues relevant to resource efficiency and the circular economy, and agree to meet, at least annually (similar to CETA's Annex on Motor Vehicle Regulation) to discuss issues relevant to the regulation of the circular economy.

Finally, should there be no appetite or interest in these levels of engagement and co-operation, Parties would be left with the horizontal GRP/IRC provisions. In this context, they should be encouraged to include an explicit reference to the environment in the horizontal GRP chapter's preamble. Moreover, they should strive to further specify and

encourage that Parties take into account, when conducting ex-ante regulatory impact assessments, the impact on the circular economy. Indeed, the EU has included the circular economy in its Sustainable Impact Assessments (SIAs) for trade agreements it is in the process of negotiating (OECD, 2020, forthcoming[27]), with specific references to the circular economy being found in the final SIA report for the Transatlantic Trade and Investment Partnership (TTIP), and the draft interim SIA reports for the Philippines and Malaysia (Kettunen, Gionfra and Monteville, 2019[30]). Such a practice could likewise be integrated in horizontal GRP/IRC chapters. Similarly, in adopting regulation on resource efficiency and the circular economy, countries can use horizontal GRP/IRC mechanisms, including special institutional bodies, to seek and encourage participation of stakeholders in the design of the regulation.

Energy efficiency

A large number of countries have adopted minimum energy performance standards (MEPS), a set of mandatory requirements for energy-related products that limit the maximum amount of energy that can be consumed by a device for a specific task (Yada et al., 2017[31]). Specifically, over 70 countries have adopted MEPS – with different levels of stringency – for at least one product (Yada et al., 2017[31]). A number of international standardisation organisation have also established different energy efficiency-related standards.

As noted above, while more than 87 countries have adopted comparable MEPS, they are not "harmonized" at global level. Harmonising standards could lead to great gains in energy efficiency. Indeed, the literature suggests that energy savings could be significant, with consumer electronics, ICT, lighting and (thermal) heating and hot water products to offer the highest potential (Molenbroek et al., 2015[8]).

Before suggesting specific options to leverage RTAs to enhance MEPS, overall negotiation dynamics warrant attention. Indeed, Yada et al. (2017[31]) find that that there is a "lack of communication and coordination between energy efficiency and trade officials during FTA negotiations". Moreover, they find that energy efficiency policymakers "have rarely recognizes the direct link between the pursuit of MEPS harmonization and the potential effects of trade agreements on this process" (Yada et al., 2017[31]). Thus, to leverage RTAs to harmonise MEPS, it would be imperative that policy makers – both the trade negotiations and the energy efficiency policymakers – understand that RTAs can be positive vectors for the harmonisation of MEPs. This could be done by increasing dialogue and co-operation with trade officials through international collaboration platforms (Yada et al., 2017[31]).

More specifically, there are several ways in which countries could leverage RTAs to advance harmonisation of energy efficiency standards. One is through encouraging or requiring Parties to base their technical regulations on an international standard on energy efficiency. A number of RTAs contain provisions doing precisely that. For instance, the EU-Japan EPA and EU-Singapore TFA both reference the IEC and the ISO as relevant standard-setting bodies. This gives countries the choice to determine which international energy efficiency standard is most appropriate and aligned with their public policy objectives. Indeed, some RTAs specifically refer to situations in which numerous standards exist, and require in these situations, that countries consider all of the international standards as the basis for their technical regulations (e.g. the USMCA).

Countries negotiating an RTA could also decide to encourage regional harmonisation, similar to the USMCA Annex on Energy Performance Standards. As noted earlier, the fact that many countries have adopted comparable MPES would make regional harmonisation,

or equivalence, a feasible next step when negotiation RTAs. Specifically, under the USMCA Annex on Energy Performance Standards, the Parties "endeavour to harmonize" test procedures and energy performance standards, by giving "due consideration" to the other Party's energy performance and test procedures, as well as industry standards developed by a standards organisation accredited in the territory of another. A footnote specifies that such harmonisation should not diminish consumer welfare, consumer protection or energy efficiency objectives. This is important, as harmonisation does not automatically lead to harmonisation to the most stringent MEPS; it could also result in harmonisation to the lowest common denominator.

Absent harmonisation or equivalence, accepting the results of another Party's conformity assessment procedure would be another option to facilitate trade in energy-efficiency products. Indeed, products that include MEPS have been included in MRAs (e.g. CETA's Protocol on Mutual Acceptance of Conformity Results). Parties could establish certified conformity assessment bodies, and agree to accept the other Party's declaration of conformity under the agreed-upon terms. Given the existence of a large amount of similar standards, this would be a key way to facilitate trade in products containing energy-efficiency standards. It would not, however require countries to adopt more stringent energy efficiency standards, which, in turn, would reduce the environmental gains predicted to come from harmonising MEPS worldwide.

Similar to the analysis of resource efficiency and the circular economy, annexes on energy efficiency could also benefit from the inclusion of provisions concerning voluntary standards, including labelling. For these types of provisions, a good starting point will be the USMCA Sectoral Annex on Energy Performance Standards, and the CPTPP Annex on Organic Labelling.

Absent any sector-specific annexes or provisions, countries should leverage horizontal IRC/GRP provisions to ensure that the environment - including energy-efficiency - is assessed when developing new regulation.

6. Discussion

This report has examined the extent to which RTAs incorporate environmental objectives in chapters and provisions related to non-tariff measures, with a particular focus on TBT and regulatory co-operation. Based on seven recent deep-integration agreements, it has examined the environmental relevance of: (a) TBT chapters that clarify and complement the provisions of the WTO TBT Agreement; (b) horizontal IRC/GRP chapters; and (c) product-specific annexes or stand-alone chapters.

Overall, horizontal provisions fostering harmonisation, mutual recognition/equivalence and transparency, rarely make specific reference to the environment. However, they can play a role in advancing environmental objectives by removing unnecessary obstacles to trade. This is particularly clear in the case of environmental goods - such as photovoltaic cells, wind turbines, energy efficient light bulbs, or equipment for wastewater treatment – where enhanced trade contributes to the scaling up of environmental technology. Such win-win situations also occur when trade enhances resource efficiency for example by exploiting comparative advantages in recycling or refurbishing materials as illustrated by the discussion on resource efficiency and circular economy.

In complementing these horizontal disciplines enshrined in RTAs, a set of more specific environmental clauses may be considered to ensure that trade facilitation mechanisms embedded in RTAs do not result in convergence towards less stringent environmental protection or the lowest common denominator. Based on existing precedents and best practices, this may include (a) incorporating the protection of the environment as one of the objectives or basic principle of enhanced regulatory co-operation, (b) incorporating, when relevant, environmental considerations in regulatory impact assessment or ex post evaluations, (c) introducing non-regression clauses providing that regulatory co-operation should not result in lower environmental protection.

Although such provisions would ensure that enhanced regulatory co-operation does not undermine environmental objectives, they would not proactively advance the environmental agenda by themselves. As illustrated by the review of existing agreements, the highest potential for enhanced environmental outcome in this area lies in product-specific disciplines. Most RTAs examined in this report include some chapters or annexes that foster regulatory co-operation with respect to particular products of environmental relevance. These provisions largely aim at materialising the potential win-win situations highlighted above. By virtue of their specificity, however, their effect in advancing environmental objectives is likely to be more immediate as compared to the more horizontal TBT and IRC/GRP provisions.

In practice, as illustrated by the examples on resource efficiency and circular economy, and energy efficiency, different types of environmental challenges warrant different approaches under RTAs. An appropriate approach will depend on the type of environmental issue, the existence of an international standard, the level of trust and integration that exists between the Parties of an RTA, the existence of relatively similar regulations/standards between Parties to the RTA, or the novelty of the issue. Moreover, it will depend on the Parties' commitment to advance environmental objectives through RTAs.

References

Agreement between New Zealand and Singapore on a closer economic partnership (2020), "Chapter 7 on Technical, Sanitary and Phytosanitary regulations and standards and the Chapter on regulatory co-operation". [32]

Agreement between the European Union and Japan for an Economic Partnership (2019), "Chapter 7 on Technical Barriers to Trade, Chapter 18 on Good Regulatory Practices and Regulatory Co-operation". [34]

Baldwin, R. (2014), "Multilateralsing 21st Century Regionalism", OECD Global Forum on Trade, https://www.oecd.org/tad/events/OECD-gft-2014-multilateralising-21st-centuryregionalism-baldwin-paper.pdf. [1]

Basedow, R. and C. Kauffmann (2016), "International Trade and Good Regulatory Practices: Assessing The Trade Impacts of Regulation", *OECD Regulatory Policy Working Papers*, No. 4, OECD Publishing, Paris, https://dx.doi.org/10.1787/5jlv59hdgtf5-en. [26]

Bollyky, T. (2017), "The Role of Regulatory Co-operation in the Future of the WTO", RTA Exchange, International Centre for Trade and Sustainable Development (ICTSD) and the Inter-American Development Bank (IDB), Geneva., http://e15initiative.org/wp-content/uploads/2015/09/RTA-Exchange-Regulatory-Coherence-Bollyky-Final.pdf. [7]

Burnett, M. et al. (2008), "Illegal Fishing in Arctic Waters, Catch of Today-Gone Tomorrow?", WWF International Arctic Programme, Oslo, https://wwf.ru/en/resources/publications/booklets/illegal-fishing-in-arctic-waters-catch-of-today-gone-tomorrow/. [33]

Carberry, R. (2017), "Regulator Considerations: Leveraging Opportunities through Regulatory Co-operation", RTA Exchange, International Centre for Trade and Sustainable Development (ICTSD) and the Inter-American Development Bank (IDB), Geneva, http://e15initiative.org/publications/regulator-considerations-leveraging-opportunities-through-regulatory-cooperation/. [14]

Comprehensive and Progressive Trans-Pacific Partnership (CPTPP) (2018), "Chapter 8 on Technical Barriers to Trade and Chapter 25 on Regulatory Coherence". [36]

Comprehensive Economic and Trade Agreement (CETA) (2017), "Chapter 4 on Technical Barriers to Trade and Chapter 21 on Regulatory Co-operation". [35]

Correia de Brito, A., C. Kauffmann and J. Pelkmans (2016), "The contribution of mutual recognition to international regulatory co-operation", *OECD Regulatory Policy Working Papers*, No. 2, OECD Publishing, Paris, https://dx.doi.org/10.1787/5jm56fqsfxmx-en. [20]

Ecofys (2014), "Impacts of the EU's Ecodesign and Energy/Tyre labelling legislation on third jurisdictions", Final Report, Ecofys for DG ENER,, https://ec.europa.eu/energy/sites/ener/files/documents/201404_ieel_third_jurisdictions.pdf. [18]

Hoekman, B. and P. Mavroidis (2015), "Regulatory Spillovers and the Trading System: From Coherence to Co-operation", E15 Task Force on Regulatory Systems Coherence, http://e15initiative.org/wp-content/uploads/2015/04/E15-Regulatory-OP-Hoekman-and-Mavroidi. [13]

IEA (2015), "Achievements of Appliance Energy Efficiency Standards and Labelling Programs, A Global Assessment", International Energy Agency, https://webstore.iea.org/download/direct/512. [2]

Kauffmann, C. and C. Saffirio (2020), "Study of International Regulatory Co-operation (IRC) arrangements for air quality: The cases of the Convention on Long-Range Transboundary Air Pollution, the Canada-United States Air Quality Agreement, and co-operation in North East Asia", *OECD Regulatory Policy Working Papers*, No. 12, OECD Publishing, Paris, https://dx.doi.org/10.1787/dc34d5e3-en. [17]

Kauffmann, C. and C. Saffirio (2020, forthcoming), "GRPs and IRC approaches in trade agreements: an historical perspective and stocktaking of recent chapters and provisions", OECD Regulatory Policy Working Papers, OECD Publishing, Paris. [21]

Kettunen, M., S. Gionfra and M. Monteville (2019), "EU Circular Economy and Trade Report: Improving policy coherence for sustainable development", IEEP Brussels / London, https://ieep.eu/publications/eu-circular-economy-and-trade-report. [30]

Koźluk, T. and C. Timiliotis (2016), "Do environmental policies affect global value chains?: A new perspective on the pollution haven hypothesis", *OECD Economics Department Working Papers*, No. 1282, OECD Publishing, Paris, https://dx.doi.org/10.1787/5jm2hh7nf3wd-en. [9]

McCarthy, A., R. Dellink and R. Bibas (2018), "The Macroeconomics of the Circular Economy Transition: A Critical Review of Modelling Approaches", *OECD Environment Working Papers*, No. 130, OECD Publishing, Paris, https://dx.doi.org/10.1787/af983f9a-en. [41]

McDaniels, D., A. Molina and E. Wijkström (2018), "How does the regular work of WTO influence regional trade agreements? The Case of International Standards and the TBT Committee", Staff Working Paper ERSD-2018-06, Economic Research and Statistic Division, https://www.wto.org/english/res_e/reser_e/ersd201806_e.pdf. [37]

Meltzer, J. (2014), "The Trans-Pacific Partnership Agreement, the environment and climate change", in Voon, T. (ed.), *Trade Liberalisation and International Co-operation: A legal analysis of the Trans-Pacific Partnership Agreement*, Edward Elgar. [38]

Meyer-Ohlendorf, N., C. Gerstetter and I. Bach (2016), "Regulatory Co-operation under CETA: Implications for Environmental Policies", Ecologic Institute, Berlin, https://www.ecologic.eu/sites/files/publication/2016/2586-regulatorische-kooperation-greenpeace-ceta.pdf. [22]

Molenbroek, E. et al. (2015), "Savings and benefits of global regulations for energy efficient products: Final report", European Union, Brussels, https://ec.europa.eu/energy/sites/ener/files/documents/Cost%20of%20Non-World%20-%20Final%20Report.pdf. [8]

Molina, A. and V. Khoroshavina (2015), "TBT provisions in regional trade agreements: to what extend do they go beyond the TBT Agreement?", Staff Working Paper ERSD-2015-09, Economic Research and Statistic Division, World Trade Organization (WTO), Geneva, https://www.wto.org/english/res_e/reser_e/ersd201509_e.pdf. [39]

Monteiro, J. (2016), "Typology of environment-related provisions in regional trade agreements", WTO Working Paper ERSD-2016-13, https://www.wto.org/english/res_e/reser_e/ersd201613_e.pdf. [45]

OECD (2020), *Environment at a Glance 2020*, OECD Publishing, Paris, https://dx.doi.org/10.1787/4ea7d35f-en. [40]

OECD (2018), *OECD Regulatory Policy Outlook 2018*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264303072-en. [24]

OECD (2017), *International Regulatory Co-operation and Trade: Understanding the Trade Costs of Regulatory Divergence and the Remedies*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264275942-en. [5]

OECD (2016), *Extended Producer Responsibility: Updated Guidance for Efficient Waste Management*, OECD Publishing, Paris, https://doi.org/10.1787/9789264256385-en. [11]

OECD (2016), *Policy Guidance on Resource Efficiency*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264257344-en. [10]

OECD (2013), *International Regulatory Co-operation: Case Studies, Vol. 2: Canada-US Co-operation, EU Energy Regulation, Risk Assessment and Banking Supervision*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264200500-en. [15]

OECD (2013), *International Regulatory Co-operation: Addressing Global Challenges*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264200463-en. [12]

OECD (2011), "Integrating the Environment in Regulatory Impact Assessments", OECD Publishing, Paris. [25]

OECD (2020, forthcoming), "International Trade and the Circular Economy - Policy Alignment", *OECD Trade and Environment Working Papers*, OECD Publishing, Paris, https://doi.org/10.1787/18166881. [27]

OECD/WTO (2019), *Facilitating Trade through Regulatory Cooperation: The Case of the WTO's TBT/SPS Agreements and Committees*, OECD Publishing, Paris/World Trade Organization, Geneva, https://dx.doi.org/10.1787/ad3c655f-en. [49]

Pacific Alliance (2016), "Additional Protocol, Chapter 7 on Technical Barriers to Trade". [42]

Prag, A., T. Lyon and A. Russillo (2016), "Multiplication of Environmental Labelling and Information Schemes (ELIS): Implications for Environment and Trade", *OECD Environment Working Papers*, No. 106, OECD Publishing, Paris, https://dx.doi.org/10.1787/5jm0p33z27wf-en. [29]

Steenblik, R. and J. Kim (2009), "Facilitating Trade in Selected Climate Change Mitigation Technologies in the Energy Supply, Buildings, and Industry Sectors", *OECD Trade and Environment Working Papers*, No. 2009/2, OECD Publishing, Paris, https://dx.doi.org/10.1787/224036730873. [6]

Sugathan, M. (2016), "Mutual Recognition Agreement on Conformity Assessment: A Deliverable on Non-Tariff Measures for the EGA?", Issue Paper No. 21, International Centre for Trade and Sustainable Development, Geneva. [19]

Trew, S. (2019), "International regulatory co-operation and the public good: How "good regulatory practices" in trade agreements erode protections for the environment, public health, workers and consumers", PowerShift e. V, Berlin. [23]

UNCTAD (2019), "International Classification of Non-Tariff Measures, 2019 Version", United Nations Conference on Trade and Development (UNCTAD), United Nations Publications, New York. [43]

United States Mexico Canada Agreement (USMCA) (2020), "Chapter 11 on Technical Barriers to Trade". [44]

Van der Ven, C. (2020), "The Circular Economy, Trade and Development: Addressing spillovers and leveraging opportunities", TULIP Consulting, Geneva, https://tinyurl.com/yymccxpx. [28]

Walls, M. (2006), "Extended Producer Responsibility and Product Design: Economic Theory and Selected Case Studies", 28 February 2006, [ENV/EPOC/WGWPR(2005)9/FINAL], OECD Working Group on Waste Prevention and Recycling, OECD Publishing, Paris. [4]

Wijkström, E. (2015), "The Third Pillar: Behind the Scenes, WTO Committee Work Delivers", E15 Initiative, international Centre for Trade and Sustainable Development (ICTSD) and World Economic Forum (WEF), Geneva. [16]

World Economic Forum (2016), "Will the Trans-Pacific Partnership Agreement Reshape the Global Trade and Investment System? What's in and What's New: Issues and Options", Global Agenda Council on Trade & FDI, White paper, July 2016. [46]

World Trade Organization (1995), "Agreement on Technical Barriers to Trade (TBT)". [47]

Yada, J. et al. (2017), "Harmonization of product energy efficiency standards and free trade agreements: the role of international cooperation", International Partnership for Energy Efficiency (IPEEC), France. [31]

Yamaguchi, S. (2018), "International Trade and the Transition to a More Resource Efficient and Circular Economy: A Concept Paper", *OECD Trade and Environment Working Papers*, No. 2018/03, OECD Publishing, Paris, https://dx.doi.org/10.1787/847feb24-en. [3]

Young, M. (2015), "Trade-Related Measures to Address Illegal, Unreported and Unregulated Fishing", E15 Initiative, International Centre for Trade and Sustainable Development (ICTSD) and World Economic Forum (WEF), Geneva. [48]