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Climate change and trade policy interaction: Implications of regionalism

Harro van Asselt

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Abstract

Climate Change and Trade Policy Interaction: Implications of Regionalism

Harro van Asselt

This report investigates the implications of regionalism for the interaction between trade and climate policy. It examines the implications of regional climate governance for international trade and conversely the implications of regional trade governance for climate change action. Regional approaches to climate change governance are discussed with a specific focus on the rise of "climate clubs" and their implications for international trade. Moreover, regional trade agreements and their current environmental provisions related to climate change are also examined. Building on these analyses, this report explores the various ways in which regional trade agreements could address climate change objectives, and draws lessons from recent developments in regional trade governance for the further evolution of such agreements.

JEL classification: F13, F18, R11, Q54, Q56.

Keywords: Trade and environment, trade and climate change, regional trade agreements, free trade agreements, climate coalitions, climate clubs, climate policy, trade policy.

Résumé

Cette étude explore les conséquences possibles du régionalisme sur l'interaction entre politique commerciale et politique climatique. Elle détaille les implications de la gouvernance régionale du changement climatique pour le commerce international et inversement les répercussions de la gouvernance régionale du commerce sur les politiques climatiques. L'étude présente les différents aspects de la notion de « régionalisme » dans la gouvernance mondiale. Elle analyse ensuite les approches régionales de la gouvernance du changement climatique. Elle s'intéresse en particulier aux « clubs climatiques », notamment à leurs implications pour le commerce international. Elle se concentre également sur les accords commerciaux régionaux et examine les dispositions existantes liées à l'environnement et au climat dans ces accords. En s'appuyant sur ces analyses, elle étudie les différentes modalités suivant lesquelles des accords régionaux pourraient répondre aux objectifs de l'action climatique et tire les enseignements des développements récents dans la gouvernance commerciale régionale en vue de faire évoluer ces accords.

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Acronyms and abbreviations

APEC	Asia-Pacific Economic Cooperation
APP	Asia-Pacific Partnership on Clean Development and Climate
ASEAN	Association of South-East Asian Nations
BCA	Border carbon adjustment
CCAC	Climate and Clean Air Coalition
CETA	Comprehensive Economic and Trade Agreement (Canada-EU)
COP	Conference of the Parties
CPLC	Carbon Pricing Leadership Coalition
CVF	Climate Vulnerable Forum
ETS	Emissions trading system
EU	European Union
FFFSR	Friends of Fossil Fuel Subsidy Reform
G20	Group of 20
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GBEP	Global Bioenergy Partnership
GMI	Global Methane Initiative
IEA	International Energy Agency
ISDS	Investor-state dispute settlement
ITA	Information Technology Agreement
JWPTE	Joint Working Party on Trade and Environment
LEDS	Low-emission development strategy
LPAA	Lima-Paris Action Agenda
MEF	Major Economies Forum
MERCOSUR	Common Market of the South
MFN	Most-favoured nation
MRV	Measurement, reporting and verification
NAAEC	North American Agreement on Environmental Cooperation
NAFTA	North American Free Trade Agreement
NDC	Nationally determined contribution
OECD	Organisation for Economic Co-operation and Development
PMR	Partnership for Market Readiness
RCEP	Regional Comprehensive Economic Partnership
REDD+	Reducing emissions from deforestation and forest degradation
RTA	Regional Trade Agreement
R&D	Research and development
SDG	Sustainable development goal
SETA	Sustainable Energy Trade Agreement
TPP	Trans-Pacific Partnership
TTIP	Transatlantic Trade and Investment Partnership
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
WTO	World Trade Organization

Table of contents

Abstract 2

Résumé 2

Acronyms and abbreviations 4

Executive summary 7

1. Introduction 9
   1.1 Multilateralism and regionalism in climate and trade governance 9
   1.2 Research objectives and methodology 11
   1.3 Outline 11
2. Regionalism in global governance 12
   2.1 From “old” to “new” regionalism 12
   2.2 Regionalism and trade governance 13
   2.3 Regionalism and environmental governance 14
3. Regionalism and climate change governance 15
   3.1 The rise of climate coalitions 15
   3.2 Climate clubs in theory 16
   3.3 Climate coalitions in practice 20
   3.4 Potential trade implications of climate clubs 21
4. Regional trade agreements and climate change: state of play 23
   4.1 Regional trade agreements and the environment 23
   4.2 Regional trade agreements and climate change 26
5. Promoting climate and trade goals through regional agreements 29
   5.1 Incorporating climate-change objectives in regional agreements 29
   5.2 Moving forward: lessons from regional trade governance 33
   Lesson 1: Start small 33
   Lesson 2: Keep the door open to multilateralism 34
   Lesson 3: Be transparent 35
6. Conclusions 35

Annex I: Climate clubs in practice 47

Carbon Market Platform 47
Carbon Pricing Leadership Coalition (CPLC) 47
Clean Energy Ministerial 47
Climate and Clean Air Coalition (CCAC) 48
Friends of Fossil Fuel Subsidy Reform 48
Global Methane Initiative (GMI) 48
Global Research Alliance on Agricultural Greenhouse Gases 49
Greenhouse Gas Protocol 49
Group of 20 (G20) 49
IEA Technology Collaboration Programmes 49
International Partnership for Mitigation and MRV 50
International Solar Alliance 50
LEDS Global Partnership 50

Major Economies Forum (MEF) 50
Mission Innovation 51
Partnership for Market Readiness (PMR) 51

Annex 2: Climate-relevant environmental provisions in regional trade agreements 52

Tables

Table 1. A sample of climate coalitions in practice 22
Table 2. Summary of ways in which regional agreements could further help to achieve trade and climate goals 32

Figures

Figure 1. Environmental provisions in RTAs over time 25

Boxes

Box 1. What is a “region”? 11
Box 2. Climate club proposals 18

Executive summary

Both climate change and trade governance are at a crossroads, with multilateral negotiations increasingly flanked by regional approaches. Although the Paris Agreement on climate change adopted in December 2015 has ensured that faith in multilateralism is still intact, its implementation will likely involve co-operative activities by smaller groups of parties. In the area of trade governance, multilateral trade talks are accompanied by a large number of regional trade agreements (RTAs), including a set of mega-regional agreements involving some of the world's major trading nations.

This study draws out the implications of this trend of regionalism for the interaction between trade and climate policy. It examines the implications of regional climate governance for international trade on the one hand, and the implications of regional trade governance for climate change on the other. It further points to possible ways forward for regional approaches with a view to contributing to both trade and climate change objectives.

For the purposes of this study, the notion of "regionalism" is understood broadly to encompass co-operation between limited-membership coalitions of countries (with or without the participation of other actors). Regionalism, the study suggests, is pervasive in all areas of global governance, including economic co-operation, security, and environmental governance. Regionalism in the areas of trade and environmental governance is often associated with the absence of progress at the multilateral level, and the perceived advantages of moving forward with a smaller group of countries. This has also been a major rationale behind the emergence of limited-membership coalitions in the area of climate change co-operation.

One specific type of limited-membership coalitions, namely so-called "climate clubs", has received mounting attention in the literature. Climate clubs, for the purposes of this study, can be defined as limited-membership coalitions between states (with possible participation by non-state actors) that promote co-operation on climate-related activities, and that confer benefits on its members in return for contributions by those members. In theory, such clubs have five distinct features: (1) they have limited membership; (2) they involve co-operation on climate-related activities; (3) they confer exclusive benefits on members (but they also confer non-excludable benefits on non-members if they lead to climate change mitigation); (4) they require a contribution from members; and (5) they usually require some form of monitoring and review. Specific climate clubs to complement the multilateral climate regime have been suggested in the literature, including technology-oriented clubs, carbon-pricing clubs, trade liberalisation clubs, and sectoral clubs.

However, a careful distinction should therefore be drawn between climate clubs that have been proposed in theory and the limited-membership coalitions that can be observed in practice. Existing coalitions are not climate clubs in the narrow sense suggested by theorists, although it is possible that such climate clubs may still emerge in the future, for

instance to facilitate the implementation of nationally determined contributions under the Paris Agreement. Although existing limited-membership coalitions are therefore not the same as climate clubs proposed in theory, they may still bring about important benefits for the coalition members, such as access to finance and technology.

To the extent that some proposals for climate clubs suggest the creation of exclusive trade-related benefits for the club members or the imposition of trade sanctions on non-members, they can raise challenges from the perspective of international trade law. However, an important finding of this study is that even though trade measures are contemplated in some proposals for climate clubs, none of the limited-membership coalitions identified in this study that currently exist in practice includes such measures. Nevertheless, participants in existing coalitions may decide in due course to put in place trade measures to offer an incentive for participation.

The study further finds that climate-related provisions can already be found in many RTAs. Such provisions include general provisions on the environment (e.g. provisions to uphold or enforce environmental laws), provisions on pursuing the liberalisation of environmental goods and services, and provisions on climate-related co-operation (e.g. provisions specifying co-operation on carbon markets or renewable-energy technologies). Such existing provisions could be further diffused and used in other RTAs.

The study finds also that there is a wide range of possibilities for addressing climate change through RTAs. These possibilities include further liberalisation of trade in environmental goods and services, mutual recognition or harmonisation of regulatory standards, reducing the harmful effects of energy subsidies, promoting climate-friendly government procurement and investment, as well as institutional and procedural suggestions for reform. Other possibilities include enhancing co-operation on climate change that could be achieved through RTAs or other climate clubs. Co-operation could, for instance, focus on specific clean-energy technologies or the further development of carbon markets.

Finally, by drawing lessons from the evolution of trade governance, the study suggests that it may be beneficial for regional agreements addressing climate change and trade to: (1) start small (in terms of membership and/or the scope of the agreement), with a view to obtaining critical mass over time; (2) maintain connections with multilateral approaches, either by multilateralising what has been achieved at the regional level or by otherwise feeding in to multilateral regimes, including the climate-change regime; and (3) ensure that the negotiation and implementation of regional agreements are carried out in a transparent fashion, with a view to building trust between members and non-members, and showcasing achievements.

1. Introduction

1.1 Multilateralism and regionalism in climate and trade governance

The interlinkages between the international regimes governing climate change and international trade have long been the subject of interest among policy-makers and commentators. Both regimes have an important role to play in pursuing sustainable development, as was once again underlined with the adoption of the Sustainable Development Goals (SDGs) in September 2015. Whereas taking urgent action to combat climate change and its impacts was declared a goal in and of itself (SDG13), trade is seen as a vital means of implementation to achieve the goals.

Just a few months following the adoption of the SDGs, in December 2015, both the climate and trade regimes marked important milestones. Climate-change negotiators were faced with the difficult task of reaching a new legally binding agreement to tackle climate change in the post-2020 era that would put in place similar mitigation commitments for *all* countries. Trade negotiators, meanwhile, acknowledged their different views on multilateral trade negotiations, following a long period of slow progress in the context of the Doha Round of trade talks.

The direction in which the international climate regime is heading has become clearer since the adoption of the Paris Agreement. The Agreement forms the basis for a new era of international co-operation on climate change, putting in place obligations that apply to all its parties. As of January 2017, 127 (out of 197) parties have ratified it, ensuring a very rapid entry into force of the treaty (on 4 November 2016), and boding well for participation by a wide group of countries.

The Paris Agreement is important in that it confirms the shift towards a hybrid governance architecture that started with the 2009 Copenhagen Accord and 2010 Cancún Agreements. This shift means that legally binding emission reduction targets have been replaced by non-legally binding nationally determined contributions (NDCs), through which countries determine their individual level of ambition as well as the type of contribution they intend to make. Although the NDCs themselves are non-binding, there are legally binding obligations to submit and update NDCs, to take mitigation measures to achieve NDCs, and to regularly report on progress. The basic idea is that, over time, the Paris Agreement will function as a mechanism to ratchet up parties' ambition. This mechanism consists of the following elements: (1) long-term temperature goals to stay below 2°C and to pursue efforts to limit the temperature increase to 1.5°C, and a long-term goal of achieving a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of the century; (2) a five-yearly cycle of submitting NDCs; (3) the provision that new NDCs will represent a progression beyond previous ones and that they will reflect a party's highest possible ambition; and (4) periodic review, including a review of implementation through a transparency framework; a review of compliance through an implementation and compliance mechanism; and a review of overall progress through a five-yearly global stocktake, starting in 2023.

Similar to the Paris Agreement, which has been hailed as a landmark in the development of international climate policy, the outcome of the 10th World Trade Organization (WTO) Ministerial Conference (MC10) in Nairobi during the same month was seen as an important step forward. MC10 led to some important outcomes – notably an agreement to eliminate agricultural export subsidies and an expanded plurilateral Information Technology Agreement (ITA). In addition, the outcome pointed to the future of multilateral trade negotiations, as expressed in the Nairobi Ministerial Declaration:

> *We recognize that many Members reaffirm the Doha Development Agenda, and the Declarations and Decisions adopted at Doha and at the Ministerial Conferences held since then, and reaffirm their full commitment to conclude the [Doha Development Agenda] on that basis. Other Members do not reaffirm the Doha mandates, as they believe new approaches are necessary to achieve meaningful outcomes in multilateral negotiations. Members have different views on how to address the negotiations. We acknowledge the strong legal structure of this Organization. (WTO, 2015: para. 30)*

The reference to "new approaches" sets the stage for further agreements negotiated at the multilateral as well as at the regional level. For instance, negotiations on several plurilateral agreements have started in recent years, including on services and environmental goods. In addition to these plurilateral agreements linked to the WTO, the number of regional and bilateral trade agreements concluded outside of it has grown significantly. Moreover, a recent development has been the negotiation of trade agreements between groups of major trading partners, also known as mega-regionals.

Although the Paris Agreement seemingly presents a victory for multilateralism, it needs to confront similar changes as the international trade regime, in the sense that it has been increasingly flanked by a wide variety of limited-membership coalitions involving a diverse group of actors, including but not limited to states (e.g. Hoffmann, 2011; Keohane and Victor, 2011; Zelli, 2011; Abbott, 2012; Moncel and van Asselt, 2012; Weischer et al., 2012; Bulkeley et al., 2014). The Paris meeting itself was the birthplace of several new coalitions, including Mission Innovation – an initiative led by the United States (US) and France to promote research and development (R&D) in clean energy; the related Breakthrough Energy Coalition – a clean energy investment initiative led by Bill Gates; and the International Solar Alliance – an initiative led by India and France to promote solar energy in the developing world. The decision accompanying the Paris Agreement offers opportunities for further coalitions and initiatives to emerge in the future. Specifically, the decision puts in place an annual high-level event for the 2016-20 period that "[p]rovides an opportunity for announcing new or strengthened voluntary efforts, initiatives and coalitions" and "[t]akes stock of related progress and recognizes new or strengthened voluntary efforts, initiatives and coalitions" (UNFCCC, 2015: para. 121(c)).

While these processes have yet to deliver results, it can be assumed that they will continue to play an important role following the entry into force of the Paris Agreement, since the Paris Agreement offers significant flexibility in its implementation. For instance, Article 6 of the Paris Agreement allows parties to engage in "voluntary co-operative approaches", which involve the use of "internationally transferred mitigation outcomes". It also establishes a sustainable-development mechanism, which can build on existing mechanisms such as the Clean Development Mechanism. Parties are not required to use these instruments, but those parties that choose to co-operate in a smaller group to implement their NDCs can use them if they so wish.

The parallels in the two regimes thus become clearer. Albeit for different reasons, both trade and climate governance are increasingly characterised by new, regional governance arrangements, and in both issue areas the potential advantages and drawbacks of this trend have been heavily debated.[1] After initial scepticism of "minilateral" approaches in climate-change governance (McGee and Taplin, 2009; Eckersley, 2012), it has become increasingly clear that linking limited-membership coalitions to the multilateral framework could be

[1] On climate change, see e.g. Asheim et al., 2006; Biermann et al., 2009; Keohane and Victor, 2011; Van Asselt and Zelli, 2014. On trade, see e.g. Bhagwati, 2008; Leal-Arcas, 2011b.

beneficial (Falkner et al., 2010), and the discussion has increasingly focused on the nature of those links (Abbott, 2014; Hale and Roger, 2014; Chan et al., 2015a; Jordan et al., 2015). Similarly, in the field of trade governance, discussions have begun to focus on how to multilateralise the commitments made in preferential trade agreements (Baldwin and Low, 2009; Baldwin, 2014).

However, more can still be learned about the implications of this type of "regionalism" in climate change and trade governance, by examining the developments in the trade and climate-change fields more closely. Moreover, regional approaches may also lead to new challenges and opportunities with respect to the climate and trade overlap. Although this overlap has been discussed extensively in the multilateral context (e.g. Hufbauer et al., 2009; WTO and UNEP, 2009; Epps and Green, 2010; Zelli and van Asselt, 2010; Bacchus, 2016), the implications of regional approaches have received far less attention. Such implications may relate to trade-related measures that are envisaged in so-called "climate clubs" (e.g. Nordhaus, 2015), but they may also be linked to the environmental or climate-related provisions of regional trade agreements (RTAs) (Jinnah and Morgera, 2013; Leal-Arcas, 2013).

1.2 Research objectives and methodology

This study examines the above-mentioned trends and their implications in more detail. More specifically, it addresses the following three research objectives:

- To examine how and under what conditions regional climate-change governance could have implications for international trade (Chapter 3);
- To investigate in what ways bilateral and regional relationships established for regional trade agreements (RTAs) could further facilitate increased international policy action on climate change (Chapters 4-5); and
- To explore whether and how lessons for climate change governance can be drawn from the regionalism trend observed in the domain of trade policy (Chapter 5).

The study is based on a desk-based review of the following bodies of literature: (1) studies of developments in international trade and climate-change policy; (2) studies of regionalism in global governance, including specifically in environmental, climate and trade governance; (3) studies examining limited-membership coalitions for climate-change co-operation; and (4) studies examining the overlap between trade and climate-change policies, particularly focusing on how RTAs address environmental and climate-change issues.

1.3 Outline

The study is structured as follows. To set the stage, Chapter 2 offers an overview of what can be understood as "regionalism" in global governance, drawing particularly on studies on the concept in the context of trade governance and environmental governance. Chapter 3 then examines regional approaches to climate-change governance. It specifically discusses the rise of "climate clubs", including the implications of such clubs from the perspective of international trade. Chapter 4 then moves on to RTAs, and explores the state of play of provisions related to the environment and climate change in such agreements. Drawing on the insights from the preceding chapters, Chapter 5 then explores the various ways in which regional agreements could address climate change, and draws lessons from regional trade governance for the further evolution of such agreements. Chapter 6 offers concluding thoughts.

2. Regionalism in global governance

To sketch the context for the remainder of this study, this chapter reviews the literature on regionalism in global governance, offering a brief history of the notion of regionalism (Section 2.1), followed by a discussion of regionalism in trade (Section 2.2) and environmental governance (Section 2.3).

2.1 From "old" to "new" regionalism

Throughout history, region-building projects can be observed in many parts of the world (Söderbaum, 2015). Regional integration became an important focus in Europe in the 1950s and 1960s, mainly with a view to building peace after two devastating wars. Notably, the European Economic Community was created in 1958. In this era of "old regionalism", scholars argued that for some functional needs co-operation beyond the nation state was necessary, and that this co-operation on technical issues could form the basis for deeper political union (Mitrany, 1943; Haas, 1958; 1964).

There were also important regional developments elsewhere. In Latin America, efforts at deeper co-operation focused mainly on promoting industrialisation by substituting imports with domestic production (Carpenter, 2009). In Africa, where an increasing number of states gained independence, several regional institutions were established, such as the Organization of African Unity (now the African Union), which came into being in 1963. In Asia, the Association of Southeast Asian Nations (ASEAN) was created in 1967. Some of these organisations evolved in recent times to also pursue other aims, during what has been referred to as the "new regionalism" (Hurrell, 1995). Characteristics of a region are specified in Box 1.

Box 1. What is a "region"?

This study focuses on the region that is situated between the "national" and the "global" (Börzel and Risse, 2016). Usually, definitions of "region" have an explicit geographical component. Yet geographical proximity on its own is not necessarily sufficient, and other features shared by members, such as cultural, linguistic, social or historical ties, also matter (Mansfield and Milner, 1999). The "region" may also be determined by the interdependencies created by a certain subject matter (Nye, 1968). For instance, under the WTO definition of RTAs, an agreement between the United States and Jordan is considered "regional".

But can an agreement between India, African countries and the US to promote solar energy be considered "regional"? If geographical proximity is emphasised, the answer is "no". Likewise, it may be challenging to find ethnic, cultural, historical or linguistic ties. Yet economic or political cohesion – in this case on a specific issue – could also be deemed to be sufficient (Hettne, 2005), meaning that the boundaries of what is and what is not a region are being blurred. Given these considerations, as well as the onset of limited membership coalitions (in both trade and climate change governance) that are not necessarily confined to areas that are geographically close, the remainder of this study will entertain the possibility that a "region" can be determined by the joint interests created by the subject matter of co-operation.

The "new regionalism" was characterised by the absence of hegemonic superpowers, more varied types of regional approaches (not only focusing on economic affairs or security), and the inclusion of non-state actors (Fawcett, 2004; Söderbaum, 2015). This period also featured deeper economic integration at the regional level throughout the world. In addition to the formation of the EU, it witnessed the birth of the North American Free Trade Agreement (NAFTA) and MERCOSUR. Studies of regionalism came to find that

region-building was not only driven by endogenous factors tying the region together, but was also influenced by exogenous factors, such as globalisation (Hettne, 2005).

2.2 Regionalism and trade governance

The formation and strengthening of trade blocs in the Americas and Europe in the late 1980s and early 1990s had as a consequence that other countries were incentivised to join or to establish their own agreements (Baldwin, 1997). The number of RTAs concluded has boomed in the last two decades. By July 2016, the WTO had received 635 notifications of RTAs, 423 of which were in force at that time.

Such "less-than-global" approaches in trade governance are not new. The Tokyo Round of trade negotiations (1973-1979) already led to nine plurilateral "codes", which were eventually incorporated in the single undertaking of the Uruguay Round that led to the formation of the WTO.

The rise of regionalism in trade governance sparked a debate on whether RTAs should be seen as "stumbling blocks" or rather as "building blocks" and "stepping stones' (Bhagwati, 1992; Lamy, 2002). Some feared that the new wave of regionalism would lead to renewed protectionism (Bhagwati, 1992; 2008) or saw RTAs as a distraction from global trade talks (Leal-Arcas, 2011). Others suggested that RTAs would support the multilateral trading system, by deepening and broadening (i.e. including new issue areas) trade liberalisation, moving trade negotiations forward among a smaller group of states, and by experimenting with rules that could eventually be multilateralised (Baldwin, 2006).

The WTO Agreements establish certain conditions under which WTO Members may adopt regional agreements. RTAs can be adopted in the context of Article XXIV of the General Agreement on Tariffs and Trade (GATT), which requires, among others, a commitment to "open regionalism" by stipulating that new free-trade agreements do not become more protectionist. Moreover, it requires that substantially all the trade between the trading partners should be covered, counteracting the cherry-picking of products and sectors (Glania and Mathes, 2005). The majority of RTAs (435) notified to the WTO by July 2016 was of this type.

In recent years, the discussion of regionalism in the trade context has taken a new turn with the emergence of mega-regional agreements. Negotiations of the EU-Canada Comprehensive Economic and Trade Agreement (CETA) were concluded in August 2014, and the agreement was signed in October 2016. The Trans-Pacific Partnership (TPP, bringing together Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, United States and Viet Nam) was signed in February 2016. All TPP signatories have an initial period of two years from signature to complete their domestic procedures necessary to ratify the agreement. The negotiations for another mega-regional, the Transatlantic Trade and Investment Partnership (TTIP) between the EU and US, are still ongoing, as are the negotiations for the Regional Comprehensive Economic Partnership (RCEP), involving the ASEAN members, along with China, Japan, South Korea, India, Australia and New Zealand.

The mega-regionals are not only important because of the parties involved – which include some of the world's major trading nations – but also because of their expansive scope, which goes well beyond market access to also cover regulatory coherence. The agreements are being pursued for a variety of reasons, including improving market access, updating older RTAs to meet new conditions, addressing emerging issues, and improving competitiveness. In addition, they may also contribute to geopolitical or other strategic

goals, for instance by influencing partners in a specific region or influencing the future development of multilateral trade rules (WEF, 2014).

Given their scope and membership, mega-regionals may influence multilateral rule development, as future multilateral rules may be modelled after the mega-regionals (Baldwin, 2014). However, the extent to which this will happen remains to be seen, as the various mega-regionals have received significant scrutiny in the nations involved, and have been criticised by some in civil society for their lack of transparency.

2.3 Regionalism and environmental governance

Studies of regionalism focus to a large extent on economic integration and trade, as well as security. Environmental governance, by contrast, has received scant attention, even though regionalism has played an important role in this issue area (Balsiger and VanDeveer, 2012; Conca, 2012; Balsiger and Prys, 2016; Haas, 2016).

The early stages of the development of international environmental law were characterized by regional and bilateral co-operation, mainly focusing on the protection of species of fauna, mainly focusing on the protection of species of fauna, such as the 1900 London Convention for the Preservation of Wild Animals, Birds and Fish in Africa and the 1922 North Pacific Fur Seals Convention. Likewise, freshwater is another issue area where regional co-operation – between upstream and downstream states – has been sparked by the regional nature of the problem at hand – i.e. the river basin (e.g. the 1995 Mekong Agreement) or the aquifer (e.g. the 2010 Guarani Aquifer Agreement). Pollution, including air and marine pollution, may similarly call for transboundary and regional co-operation (e.g. the 1976 Convention for the Protection of the Mediterranean Sea against Pollution or the 2002 ASEAN Agreement on Transboundary Haze Pollution). In other words, the material features of some environmental problems make them amenable to be addressed through regional approaches.

Regional environmental agreements can be attractive for various reasons. Compared with global approaches, regional approaches may also reduce transaction costs or enhance the feasibility of monitoring (Conca, 2012). Regional environmental agreements may also flourish in the absence of multilateral progress on specific environmental issues – where the larger number of countries may slow down the speed of progress (Biermann et al., 2009). This may, for example, in part explain the rise of regional action in the issue area of climate change, as the next chapter discusses. Another attractive feature – which is also one of the reasons cited in support of RTAs – is that regional environmental agreements can be possible laboratories for testing, and possibly diffusing, international environmental norms (Conca, 2012). An example of this is the 1998 Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, which is the only treaty that sets rules to implement Principle 10 of the Rio Declaration on Environment and Development. Although the convention is limited in application to the UN Economic Commission for Europe region, it is notable that its idea is being emulated in the Latin American context. Regional environmental agreements thus can be seen as possible laboratories for testing, and possibly diffusing, international environmental norms (Conca, 2012).

3. Regionalism and climate change governance

This chapter discusses regionalism in the context of climate change. International co-operation to mitigate or adapt to climate change that is "regional" in the more traditional sense (i.e. between members that are close in geographic proximity) can be observed in various parts in the world (Agrawala et al., 2014). One example is the EU, where co-operation on climate change between Member States has intensified over the years, up to the point that the EU sets emission-reduction targets for the region, uses region-wide policy instruments (notably its emissions-trading system (ETS)), and has harmonised rules for the monitoring and reporting of emissions. Regional co-operation also takes place elsewhere, however. For instance, climate change has been regularly on the agenda of the Asia-Pacific Economic Cooperation (APEC) summits, and APEC leaders in 2014 pledged to double the share of renewable energy in their electricity systems. A more recent example is the US-Canada Joint Statement on Climate, Energy, and Arctic Leadership, in which the countries pledge to co-ordinate the regulation of methane emissions in the oil and gas sector.[2] Regional co-operation is not limited to national governments. An important example is the Covenant of Mayors for Climate and Energy, which promotes city-level climate action in the European region.[3]

As noted in the previous chapter, however, this study will not limit itself to these types of co-operation. Instead, the focus will be on coalitions and initiatives of a limited set of countries, at times collaborating with other actors. The chapter first offers the historical context for the rise of climate coalitions and initiatives (Section 3.1). It then explains theoretical aspects of climate clubs in general (Section 3.2) and by offering examples of proposed clubs (Section 3.3), followed by a comparison to what can be deemed climate clubs in the real world (Section 3.4). Next, it discusses the design details of these clubs that may have implications for trade and international trade law (Section 3.5).

3.1 The rise of climate coalitions

As a collective-action challenge,[4] climate-change action requires participation by all countries in order to prevent free-riding, i.e. countries benefiting from the efforts of other countries without contributing themselves. Crafting a global regime in which all countries have binding emission-reduction targets has proved to be challenging, however, given long-standing contestations about the best way of sharing the effort to tackle climate change. Moreover, progress has been slow, due in large part to the fact that the multilateral climate regime involves 197 parties, and decisions are adopted by consensus, meaning that one country or a small group of countries can block progress. Minilateral approaches, involving a limited number of countries, could arguably overcome these problems (Stern and Antholis, 2007; Antholis, 2009; Victor, 2015). One of the core ideas behind such minilateral coalitions is that it is easier to get to agreement among a smaller number of like-minded countries than through a multilateral negotiation process (Kahler, 1992; Victor, 2006; Naím, 2009; Victor, 2011). Moreover, it is argued that if such coalitions put in place trade measures, they can solve the free-rider problem (Nordhaus, 2015).

2 See *www.whitehouse.gov/the-press-office/2016/03/10/us-canada-joint-statement-climate-energy-and-arctic-leadership*.

3 See *www.covenantofmayors.eu/*.

4 A collective action challenge is a problem characterised by incentives that make it less likely that individuals will cooperate to achieving a common goal. See generally Olson (1971).

Minilateral approaches moved from theory to practice in the mid-2000s. In this period, the United States became involved in several initiatives involving a limited number of countries. One notable example was the Asia-Pacific Partnership on Clean Development and Climate (APP), which was launched in 2005, and brought together Australia, China, India, Japan, South Korea and the United States, later followed by Canada. The APP nations comprised some of the world's largest emitters, which was a major rationale for creating the APP and for its potential to be effective.

The United States also led a number of other technology-oriented initiatives (e.g. the Carbon Sequestration Leadership Forum and the International Partnership for a Hydrogen Economy), as well as a new dialogue process, the Major Economies Meeting on Energy Security and Climate Change. Following the election of President Obama in 2008, the APP was integrated in other, newly emerging initiatives, and the Major Economies Meeting was re-launched as the Major Economies Forum, with a clear mandate to support the UNFCCC. Following the Copenhagen climate conference in 2009, several new initiatives emerged, such as the Climate and Clean Air Coalition (CCAC), which addressed an issue hardly covered by the UNFCCC, namely short-lived climate pollutants. With the emergence of new initiatives, and the inclusion of new partner countries in older initiatives, the narrative began to shift towards ways in which clubs could complement the multilateral climate regime.

A further impetus for new coalitions and initiatives was provided by the United Nations Secretary-General's climate summit, held in October 2014. The summit launched over 50 new climate actions, involving both state and non-state actors, and covering issue areas as wide-ranging as transport, oil and gas production, forests, agriculture and cities.[5] In the lead-up to Paris, climate coalitions were increasingly discussed in the context of non-state climate action more generally. Attention for such actions received a significant boost at the twentieth Conference of the Parties (COP) in Lima, where the Peruvian government, together with the incoming French COP21 Presidency, announced the Lima-Paris Action Agenda (LPAA) to encourage and support new initiatives. On the road to Paris, the French Presidency kept non-state action firmly on the agenda by making the LPAA one of the four pillars of COP21. As Chapter 1 mentioned, the decision accompanying the Paris Agreement encourages the emergence of further coalitions and initiatives.

3.2 Climate clubs in theory

It is thus clear that limited-membership coalitions for climate change co-operation started to emerge in practice. At the same time, various scholars put forward a range of different proposals for limited-membership coalitions, linking to economic theories on clubs. Such 'climate clubs', for the purposes of this study, can be defined as limited-membership coalitions between states (with possible participation by non-state actors[6]) that promote co-operation on climate-related activities, that confer exclusive benefits on its members in return for contributions by those members, and that provide for some type of

5 The jury is still out on whether these initiatives have delivered in terms of emission reductions. However, initial analyses are moderately positive (Chan et al., 2015b; Hsu et al., 2015).

6 Such non-state actors notably includes business actors (e.g. companies and investors). The role of private sector initiatives and commitments is increasingly acknowledged, for instance through the listing of such commitments on the UNFCCC's NAZCA (Non-state Actor Zone for Climate Action) platform: *http://climateaction.unfccc.int/*. This study does not specifically discuss the role of the private sector in climate clubs or other limited-membership coalitions. For a discussion of clubs involving the private sector, see, for instance, Prakash and Potoski (2007) and Green (2015).

monitoring and review. Several proposals from the literature for climate clubs are discussed in Box 2.

The concept of climate clubs has been influenced by club theory in economics (Buchanan, 1965). A club, according to this theory, is characterised by the facts that it is owned by its members, and that it produces a club good. A club good is a good that is non-rivalrous (i.e. consumption by one person does not decrease the possibility for consumption by another person) and excludable (i.e. only members enjoy the benefits, and it is possible to prevent non-members from enjoying the benefits). Classic examples of club goods are toll roads, cinemas, and newspapers.

A climate club, in this sense, would therefore be a group with members that produces a club good. But what would then be the club good? The good that is ultimately being pursued, climate-change mitigation, is by its very nature non-excludable, as the benefits are enjoyed by all. This means that another excludable good would need to be identified, with emission reductions (or climate-change adaptation) being a co-benefit (Stewart et al., 2013a). There are a few possible examples, such as exclusive access to environmentally sound technologies (e.g. access to patents), mutual provision of knowledge, access to technical assistance, preferential trade terms for low-carbon products and services, access to climate finance, access to market-based mechanisms (e.g. providing for the fungibility of emission units from different emissions trading systems), reputational benefits, and network effects (Stewart et al., 2013a; Victor, 2015; Falkner, 2016; Green, 2015; Hovi et al., 2016).

Drawing on the literature on climate clubs, five main features of such clubs can be identified. A first feature is *limited membership*. This feature raises several questions, however. First, what level and type of membership constitutes a club? Second, what should the membership look like? And third, should membership be stable or evolve? As to the first question, an initiative that involves most countries in the world can hardly be seen as a proper club. However, it is hard to draw a line at a specific number (e.g. a club has to have fewer than 50 members). In addition to the number of members, the type of members may vary, and it is worth making explicit that clubs may involve nation states only, non-state actors only, or a mix of both.

Concerning the second question, Naím (2009: 135) suggests that membership should include "the smallest possible number of countries needed to have the largest possible impact on solving a particular problem". For some, a "G-2" of China and the United States would suffice (Stewart and Wiener, 2003). Dellinger (2014) proposes that the magic number is three, and also includes the EU. Stern and Antholis (2009) suggest an "E8" of key countries. Ultimately, however, the right membership depends on how "a particular problem" (Naím, 2009) is defined. If the aim is large-scale emission reductions, this would point to bringing together the major emitters. But if the aim is to ensure the legitimacy of a climate club, it may be necessary to bring a mix of countries, including countries vulnerable to climate impacts, to the table (Eckersley, 2012; Weischer et al., 2012; Falkner, 2016). And if the aim is to showcase ambition, this may call for a "coalition of the willing" (Hale, 2011; Falkner, 2016; Hermwille et al., 2015).

The third question concerns the further development of club membership. Nordhaus (2015) suggests that "stable" club membership, meaning that no member would want to leave, is a precondition for a successful club. Likewise, Hovi et al. (2016) suggest that the success of a club depends on its ability to attract new members. However, whether stable or expanding memberships are beneficial will depend on the club's goals and context. If the goal of a club is to increase ambition, one could argue that the more ambitious members are

included, the better; conversely, in some cases, it may be preferable that some members leave.

A second feature of climate clubs is that they involve *co-operation on climate-related activities*. Climate clubs need not be limited to climate mitigation, but could also address adaptation and impacts (as well as climate engineering). For instance, Sugiyama and Sinton (2005) suggest an "orchestra of treaties", including a treaty on "climate-wise development" (see also Barrett, 2010a; Victor, 2015). Climate-related activities can also include activities that produce climate benefits as a side-effect. This means that RTAs with positive impacts on climate action could, in principle, be seen as a climate club (see Chapter 4).

A third feature of climate clubs is that they *confer benefits on members*. The key question here is whether these benefits are, or need to be, excludable. As noted above, in economic clubs such benefits (e.g. access to finance; reputational benefits) would accrue to members only. However, in Green's (5) pseudo-clubs, the excludable benefits may be virtually non-existent. Moreover, as noted above, the benefit of climate-change mitigation is by definition non-excludable.

Fourth, climate clubs would require some form of *contribution from members*. The form of the contribution depends on the scope and goals of the club, and can include financial contributions (e.g. public finance to support research in solar technology), reporting or otherwise sharing information (e.g. sharing information on best practices for improving energy efficiency in a specific sector), or adopting and implementing policies (e.g. putting in place a system to monitor emissions) (Stewart et al., 2013a).

Lastly, climate clubs usually require some type of *monitoring and review* to ensure that club members make their contributions to the club (Stewart et al., 2013a). Even in the voluntary green clubs proposed by Prakash and Potoski (2007), a review mechanism is foreseen, in the form of third-party verification that participants lived up to the club standard. However, in the pseudo-clubs proposed by Green (5), monitoring and reviewing compliance is considered less important.

The reasons for the creation of climate clubs suggested in the literature are multiple and are usually linked to the limitations of multilateral co-operation. First, the limited number of membership can facilitate speedier decision-making (Biermann et al., 2009; Falkner, 2016). The limited number of members can also facilitate issue-linkages and side-payments, which in turn can bring reluctant actors into the club (Falkner, 2016; Sælen, 2015). This brings us to the second rationale: clubs can produce specific benefits for the members, as discussed above. The more such benefits would be available to club members only (i.e. the more they are excludable), the stronger the incentive for creating (or joining) a club. Third, clubs provide a forum for countries eager to lead the way to move ahead without being constrained by reluctant players.

The flipside of this is that a club may also be created by a laggard to avoid progress in the multilateral negotiations, opening up opportunities for forum-shopping (Biermann et al., 2009). Other rationales may also apply. Countries (or other actors) may wish to create a club to showcase leadership and reap reputational rewards (e.g. by being the first to undertake a particular type of policy measure). Further, clubs may offer networking opportunities, and lead to an emulation and diffusion of best practices in- and outside the club (Green, 2015).

Box 2. Climate club proposals

Several types of climate clubs have been proposed in the literature. Although none of these clubs exist in practice, understanding their proposed design can be informative, as these proposals seek to reap the purported benefits of club approaches highlighted above. A first type of club can be called carbon-pricing clubs (Nordhaus, 2015; Petsonk and Keohane, 2015; Stanley Foundation, 2016). Nordhaus (2015) proposes a club of countries that would implement an international target carbon price; countries would be free to choose if they would pursue the price through a carbon tax, emissions trading, or a mix of both. To incentivise participation by other countries, Nordhaus suggests putting in place tariffs on imports, irrespective of their carbon content.

Another type of carbon-pricing club, the club of carbon markets proposed by Keohane (2015), would seek to reap the benefits of strengthened co-operation between different jurisdictions with an ETS. Going beyond the mere linking of systems, the club would provide for a common market infrastructure. To foster the mutual recognition of emissions allowances, the club would follow common accounting standards and procedures for measuring, reporting and verification (MRV) of emissions. The club could further provide guidelines for carbon market design. To be eligible, members would need to have an emissions target and an ETS in place, be able to ensure compliance and enforcement, and commit to MRV. The club would be open not only to national governments, but also to subnational jurisdictions. The incentives to participate are strongly related to the benefits of linking trading systems, which include cheaper emissions-abatement and greater market liquidity. Participants may also be attracted by the prospect of support for policy planning and implementation. In addition, participants could obtain reputational benefits. Keohane et al. (2015) highlight that if countries choose to adopt border carbon adjustments (BCAs), club members would likely exempt each other, creating a “safe harbour”.

A second type can be labelled technology clubs, in which countries work together to promote the development and uptake of clean-energy technologies. Stewart et al. (2013a) mention the option of a research-and-development (R&D) club focusing on renewable energy, energy efficiency, or carbon capture and storage. To incentivise participation, members would provide for technology transfer and financing, but ensure that the benefits from innovation stay within the club by providing for intellectual property protection and confidentiality arrangements.

A third type of clubs is a sectoral club. Brewer (2014; 2015), for instance, proposes an Arctic Black Carbon club to address the emissions of black carbon by international shipping in the Arctic. The club would limit commercial shipping in the Arctic to ships from countries that meet standards in relation to black-carbon emissions. As an incentive to participate, countries would exclusively share access to technologies and technical assistance. Other club proposals focus on industrial sectors. For example, Stewart et al. (2013a) discuss clubs for energy efficiency in the aluminium and textiles sectors. The club good here would be the shared knowledge about best practices in a given sector.

Finally, some have proposed trade liberalisation clubs. One example is the proposal for a Sustainable Energy Trade Agreement (SETA) by the International Centre for Trade and Sustainable Development (ICTSD, 2011). In a SETA, club members would lower tariffs for specific environmental goods and services. Moreover, the SETA would extend to other issues, including non-tariff measures.

The above-mentioned club approaches are not mutually exclusive, and it may be possible for a group of countries to agree on a club that would liberalize trade in clean energy products, harmonise technical standards, and develop joint technology R&D programmes in parallel (Stewart et al., 2013a). For instance, Morgan and Weischer’s (2013) call for a solar-economy club suggests a phased approach, wherein the initial focus is on technology R&D and sharing experiences, followed by adopting joint standards and financing, later followed by trade liberalisation.

Studies on climate clubs have also started to identify factors that could make a climate club effective, although it should be added that these considerations have yet to be applied empirically. Hovi et al. (2016), discussing climate-change mitigation clubs, suggest that a club’s effectiveness depends on: (1) the extent to which it provides a viable basis for co-operation among enthusiastic countries; (2) its ability to attract new members; and (3) the extent to which it incentivizes new and existing members to reduce emissions significantly. Weischer and Morgan (2013) similarly outline three criteria for their “transformational” climate clubs, namely: (1) an ambitious vision (i.e. in line with what

climate science suggests, going beyond business-as-usual); (2) clear conditions for membership (i.e. countries would need to meet criteria consistent with the vision); and (3) the benefits for members need to be significant and should not be available to non-members. Finally, it has been suggested that the effectiveness of clubs depends on the relationship to the multilateral climate regime, and its rules and principles (Weischer et al., 2012; Widerberg and Stenson, 2013).

3.3 Climate coalitions in practice

Having outlined climate clubs in theory, it is necessary to contrast this with the limited-membership coalitions we can observe in practice. To this end, Table 1 presents a non-exhaustive and non-representative selection of limited-membership coalitions that, at first blush, display the features of climate clubs (for more detailed descriptions, see Annex 1). Although the focus is on limited-membership coalitions in which governments participate, some examples of coalitions that only involve non-state actors are also included to show the possible scope of such coalitions.

A few observations can be made at this stage. First and foremost, climate clubs in the traditional economic sense – e.g. as proposed by Nordhaus (2015) – do not exist.[7] Such clubs may still emerge in the future – for instance, to facilitate the implementation of nationally determined contributions under the Paris Agreement – but at present no limited-membership coalitions amount to a climate club in the narrow sense. From the perspective of economic theory, it could be implied that those limited-membership coalitions will therefore not deliver the benefits usually associated with clubs. However, it is important to note that they may still bring about some of the benefits foreseen by club theory or other, equally important benefits not foreseen by theorists. This ultimately depends on the scope, goals and design of each coalition, and the incentives for participation. For instance, even though it may be unclear what exclusive benefits are conferred to G20 countries, the forum can play an important role in building consensus on key issues under negotiation in the multilateral climate regime. Similarly, while the CCAC may not appear to have strong monitoring and review systems to ensure that members do their part, the Coalition still plays a crucial role by putting into practice a variety of activities related to short-lived climate pollutants. Table 1 lists possible incentives for participating or joining the existing limited-membership coalitions, based on a preliminary review. However, the strength of these incentives will depend on the extent to which those incentives are actually forthcoming (e.g. whether finance will actually be provided).

The incongruence between clubs in theory and the limited-membership coalitions we can observe in practice calls for a clearer distinction between clubs in the narrow economic sense and other limited-membership coalitions that may share some of their features. This is particularly the case if clubs are assumed to incentivise participation through the use of trade measures. In contrast to the theoretical climate club proposals discussed above, none of the limited-membership coalitions outlined in Table 1 provides for trade measures to induce participation. This means that some of the concerns that may be raised for clubs in theory do not necessarily apply to the coalitions observed in practice.

Second, the limited-membership coalitions observed in practice carry out different types of activities (Weischer et al., 2012). This can include political dialogue, leading to

[7] However, the EU is arguably a climate club in the economic sense, as it has limited membership, offers members exclusive access to its ETS, requires contributions from its members, and is backed up by monitoring and enforcement.

high-level political declarations – such as the ones being produced by the G20 annually – or more technical dialogue between government officials working in a particular issue area (e.g. carbon markets or MRV). The coalitions can also be oriented towards implementation, for instance by facilitating technical discussions, producing best practice guidance, policy planning, or capacity building (Table 1).

Third, participation of non-state actors is the rule rather than the exception. Aside from political dialogues, non-state actors – including international organisations and agencies, non-governmental organisations, businesses, subnational governments and research institutions – play an important role in many coalitions, either as a full member or as a partner. This makes sense for those coalitions that seek to implement activities "on the ground". However, despite the involvement of non-state actors, in many initiatives governments are still in the driving seat (i.e. the main decision-makers) (e.g. Chan et al., 2015b).

3.4 Potential trade implications of climate clubs

As noted above, virtually none of the existing limited-membership coalitions include trade measures, meaning that there are no immediate implications from the perspective of the multilateral trading system. However, several of the climate clubs proposed in the literature do have potential implications for international trade.

First, to ensure exclusivity of membership, some climate club proposals suggest the imposition of trade measures against non-participants. Nordhaus (2015: 1348), for instance, suggests "a uniform percentage tariff (perhaps 2%) on all imports from nonparticipants … [which] does not relate the tariff specifically to the carbon content of imports". In WTO terms, these can be considered punitive tariffs.[8] As these tariffs are not clearly based on the carbon content of a product, it is unlikely to be the least trade-restrictive option available, particularly when alternatives such as BCAs are also taken into consideration (see below). Moreover, there is only limited flexibility that can be built into such measures, and it would be hard for the club members to argue that equivalent measures are in place for domestic industries (Epps and Green, 2010: 216-218). In other words, although such measures might be transparent and simple (Nordhaus, 2015), they may have international trade law implications (Mavroidis and De Melo, 2015).

Several climate club proposals have also raised the option of BCAs (e.g. Keohane et al., 2015; Weischer and Morgan, 2013), which can either take the form of border tax adjustments or the requirement for importers to surrender allowances at the border if a club-wide emissions trading system is in place. The possible use of BCAs raises a wide range of trade-related issues, and it is unclear whether they would be permissible under WTO law (Condon and Ignaciuk, 2013; Cosbey, 2008; Dröge, 2009; Houser et al., 2008; Cosbey et al., 2012; Holzer, 2014).

8 Nordhaus (2015: 1349) shows awareness of the WTO implications, and suggests that it requires "climate amendments" to trade law. He further assumes that there would be no retaliation by other WTO members.

Table 1. A sample of climate coalitions in practice[9]

Name	Focus	Type of coalition	Membership	Incentives for participation	Trade measures
Carbon Market Platform	Carbon markets, carbon pricing and regulatory instruments	Dialogue	States	Learning	No
Carbon Pricing Leadership Coalition	Carbon pricing	Implementation	States and non-state actors	Access to technical assistance Learning	No
Clean Energy Ministerial	Clean energy	Dialogue	State actors	Reputational benefits	No
Climate and Clean Air Coalition	Short-lived climate pollutants	Implementation	States and non-state actors	Co-benefits for health and food security Access to technical assistance Learning	No
Friends of Fossil Fuel Subsidy Reform	Fossil fuel subsidies	Dialogue	States	Reputational benefits Learning	No
Global Methane Initiative	Methane emissions	Implementation	States and non-state actors	Access to technical assistance Learning	No
Global Research Alliance on Agricultural Greenhouse Gases	Emissions from agriculture	Dialogue and Implementation	States	Access to research information and technical assistance Learning	No
Greenhouse Gas Protocol	Transparency of emissions	Implementation	Non-state actors	Early mover advantage Reputational benefits	No
Group of 20	Cross-cutting; fossil fuel subsidies	Dialogue	States	Influencing rule development Reputational benefits	No
IEA Technology Collaboration Programes	Clean energy R&D	Dialogue and Implementation	States	Access to technical assistance Learning	No
International Partnership for Mitigation and MRV	Transparency of emissions	Dialogue and Implementation	States and non-state actors	Access to technical assistance Learning	No
International Solar Alliance	Renewable energy	Implementation	States	Access to finance Access to technical assistance	No
LEDS Global Partnership	Low-emission development	Implementation	States and non-state actors	Access to technical assistance Learning	No
Major Economies Forum	Cross-cutting	Dialogue	States	Influencing rule development	No
Mission Innovation	Clean energy R&D	Implementation	States	Access to finance	No
Partnership for Market Readiness	Cross-cutting; Carbon pricing	Implementation	States and non-state actors	Access to technical assistance Learning	No

9 The coalitions in this table are listed for illustrative purposes only. They are neither meant to be exhaustive nor representative of the wider universe of limited-membership coalitions in the area of climate change co-operation.

Trade liberalisation clubs, by their very nature, overlap significantly with the multilateral trading system. A key choice for such clubs is therefore whether to create such a club under the auspices of the WTO or outside of it. In case of concluding an agreement under the WTO, there is still a choice between a stand-alone plurilateral agreement such as the Agreement on Government Procurement; or an agreement in which concessions would be extended to all WTO members on a most favoured nation (MFN) basis. For the latter, a "critical mass" of members is generally seen as preferable to ensure that the members would reap sufficient benefits (ICTSD, 2011). The latter approach is reflected in the ITA as well as in ongoing negotiations on a plurilateral Environmental Goods Agreement (EGA) under the WTO (see also Chapter 5). The former approach would offer the club members more flexibility as to what to include in the agreement, but would require consensus by all WTO members, making it politically challenging. In both cases, the benefits of the club could accrue to members outside of it, either because MFN concessions are extended to all WTO Members or because the subject matter of the club would fall within existing MFN provisions (Kennedy, 2012).

Finally, the carbon-market club proposed by Keohane et al. (2015) could also raise trade concerns in that it would provide the members of the club exclusive access to each other's emission units. This could have implications under the WTO's non-discrimination rules if emission allowances could be defined as either "goods" or "products" under the GATT, or as "services" under the General Agreement on Trade in Services (GATS).[10]

The WTO compatibility of any measure part of a climate club in practice will depend on its specific design and its effects in practice. At this stage, the key point is that some climate clubs *could* have implications for international trade, and that these require careful consideration in light of WTO law.

4. Regional trade agreements and climate change: state of play

In addition to climate clubs, in which climate change is a specific focus, RTAs can also offer benefits from the perspective of climate-change mitigation and adaptation. This chapter begins with a short discussion of RTAs and the environment (Section 4.1), before moving on to discuss how RTAs have addressed climate change thus far (Section 4.2).

4.1 Regional trade agreements and the environment

Initially, trade agreements did not expressly address environmental issues beyond the inclusion of environmental exceptions, in line with Article XX of the GATT (Jinnah, 2012). However, since the early 1990s increasing attention was paid to the potential role of trade agreements in contributing to environmental protection. For instance, NAFTA moved to include important provisions, such as the provision that some multilateral environmental agreements prevail in case of conflict (Article 104). In addition, NAFTA was accompanied by a parallel environmental agreement, the North American Agreement on Environmental Cooperation (NAAEC). The NAAEC includes provisions committing NAFTA parties to pursue high levels of environmental protection and effectively enforce their respective

10 It is unclear whether emissions allowances would be considered either of those, as the economic or financial value of allowances alone does not make them goods or services, similar to other entities such as money, which also does not fall under GATT or GATS disciplines (Werksman, 2001). Services related to carbon markets may nevertheless fall under the GATS (Martin, 2007). However, the club can allow carbon-market service providers from outside the club to operate (Petsonk and Keohane, 2015).

environmental laws, institutional mechanisms to oversee implementation of the agreement, provisions for environmental cooperation, and an accountability mechanism allowing for public submissions on whether Parties are effectively enforcing their environmental laws.

Other US and Canadian free-trade agreements soon followed suit in including environmental provisions. Likewise, from the early 1990s onwards, EU trade agreements started to incorporate references to environmental protection (Marin-Durán and Morgera, 2012), and environmental provisions were included as "special incentive arrangements" in the EU's Generalized System of Preferences (Žvelc, 2012). These developments have sparked further developments elsewhere (George, 2014a). During the past two decades, environmental provisions have been more and more frequently used, and the most recent RTAs contain the highest average number of environmental provisions (Figure 1).

In addition to the sheer number of provisions, environmental provisions have also both broadened in scope and deepened in stringency (Jinnah and Morgera, 2013). In terms of broadening, for example, following the publication of the 2006 Global Europe Strategy (European Commission, 2006), EU trade agreements have included linkages to a wider number of multilateral environmental agreements. In terms of deepening, for example, US trade agreements have become increasingly specific about the environmental action required, backed up by consultations and dispute-settlement procedures in the agreement.

The trend of including environmental provisions is continuing also in the negotiation of mega-regionals. Chapter 20 of the TPP and Chapter 24 of CETA (both agreements still pending ratification) are dedicated fully to environmental issues, and Chapter 22 of CETA is dedicated to trade and sustainable development. A chapter on trade and sustainable development is also the subject of ongoing TTIP negotiations (Frey, 2015; Leal-Arcas, 2015).

Several countries have specified in legislation or policy documents that RTAs should include environmental considerations. George (2014a) distinguishes four underlying drivers for the inclusion of environmental provisions in RTAs, namely: (1) contributing to the overarching goal of sustainable development; (2) ensuring a level playing field; (3) enhancing co-operation on environmental issues of mutual interest; and (4) pursuing an international environmental agenda. These rationales may play out differently in different country, with countries in many cases being driven both by economic (i.e. ensuring a level playing field) and environmental interests.

Figure 1. Environmental provisions in RTAs over time

Source: Morin, 2016b.

OECD (2007) and George (2014a) point out that some countries are still wary of including environmental provisions, especially far-reaching ones, in trade agreements for various reasons:

- They may fear prejudicing their positions in multilateral forums
- They may fear that new enforcement mechanisms will create new export barriers
- There is a perception that a certain environmental agenda is imposed
- They may feel that significant efforts and resources are required by the environmental commitments
- They may feel that environmental issues are best addressed outside of trade agreements
- They may be concerned that negotiating environmental commitments (particularly legally binding ones) may slow down trade negotiations
- There are uncertainties about economic effects of environmental provisions

Notwithstanding these barriers, a wide variety of environmental provisions has been included in different RTAs (OECD, 2007; Colyer, 2011; Jinnah and Morgera, 2013; George, 2013; 2014a; 2014b). Several of these provisions are of direct or indirect relevance for addressing climate change. The next section therefore discusses relevant types of provisions, offering examples from different RTAs.

4.2 Regional trade agreements and climate change

During the past years, studies carried out in the context of the ongoing work of the OECD's Joint Working Party on Trade and Environment (JWPTE) have kept track of environmental provisions in RTAs, drawing on notifications by OECD members (OECD, 2007; Gigli, 2009; George and Serret, 2011; George, 2013; 2014a; 2014b). The more recent studies keep track of the following types of references and provisions in RTAs:

- References in the preamble of the RTA
- Environmental exceptions drawing on Article XX of the GATT or Article XIV of GATS
- A commitment to uphold environmental law and not to weaken it to attract trade and investment
- Substantive environmental provisions on
  - environmental co-operation
  - public participation
  - dispute settlement
  - coverage of specific environmental issues (e.g. wildlife trafficking, illegal logging)
  - specific provisions on multilateral environmental agreements
  - implementation mechanism
- Associated *ex ante* impact assessment

While this classification is useful for identifying broad trends in the wider universe of RTAs, it does not offer sufficient detail with a view to identifying relevant provisions for climate-change mitigation and adaptation. Building on existing surveys (Gehring et al., 2013; Morin, 2016a), Annex 2 includes a wide range of relevant provisions, from the general (environmental) provisions to the (climate-) specific ones, to highlight some of the current practices in RTAs *vis-à-vis* climate change. The examples in Annex 2 are by no means suggested as a representative or exhaustive representation of relevant provisions. Instead, they aim to showcase the breadth and innovation of climate-change-related provisions in existing RTAs.

Three types of climate-related provisions can be found in RTAs (Gehring et al., 2013).[11] A first type is *related to the environment in general*, which do not mention, but nevertheless are also applicable to, climate change. This includes provisions that can typically be found in the environment or sustainable-development chapters or articles of an

[11] In addition to the provisions discussed here and listed in Annex 2, other provisions can be important from the perspective of addressing climate change. This includes provisions on dispute settlement and consultations (which may or may not extend to the environmental provisions of an RTA), provisions on investment (e.g. which may or may not allow an investor to challenge a country's climate regulations through investor-state dispute settlement), intellectual property rights (e.g. which may or may not prevent the transfer of climate-friendly technologies), and government procurement (which may enable governments to purchase environmental goods and services). Notwithstanding the importance of such provisions, and their potential negative implications for pursuing climate objectives, the focus in this section is on provisions that explicitly seek to promote environmental and climate-change considerations.

RTA, as well other provisions – e.g. related to goods, services, investment, government procurement, intellectual property rights or dispute settlement – that may be of relevance for climate change action. This type includes, for example, preambular references to the environment, references to principles of particular relevance to addressing climate change (notably the principle of common but differentiated responsibilities[12]), provisions stipulating that parties need to pursue a high level of environmental protection or committing parties to uphold, improve and enforce environmental laws. In addition, to the extent that references to multilateral environmental agreements are not specified (e.g. by listing them), any reference that specifies the relationship between an RTA and such agreements could be seen to include also the climate agreements that parties to the RTA have adopted (e.g., UNFCCC, Kyoto Protocol, Paris Agreement). This type of provision also includes incorporation of exceptions in Article XX of the GATT, with some RTAs specifically indicating that this provision is understood to include the environment, and other RTAs extending the exception to other issue areas, such as technical barriers to trade.

A second type of provision is explicitly aimed at *promoting or facilitating trade and investment in climate-relevant sectors*. This includes, among others, provisions that explicitly encourage the liberalisation of trade in environmental goods and services (which include goods and services that contribute to climate policy objectives), provisions that could be aimed at removing non-tariff barriers (e.g. through regulatory convergence), and provisions that regulate energy subsidies. Several RTAs include provisions in which parties state their intentions to liberalise trade in environmental goods and services, including for example goods or services related to renewable energy. A recent example is the EU-Singapore Free Trade Agreement (Article 13.11.2), which suggest that parties "shall pay special attention to facilitating the removal of obstacles to trade or investment concerning environmental goods and services, such as sustainable renewable-energy goods and related services and energy-efficient products and services, including through the adoption of policy frameworks conducive to the deployment of best available technologies and through the promotion of standards that respond to environmental and economic needs and minimise technical obstacles to trade". In addition to this provision, a separate chapter of the agreement is dedicated to non-tariff barriers to trade and investment in renewable-energy generation, in which it is specified that parties will "refrain from adopting measures providing for local content requirements or any other offset affecting the other Party's products, service suppliers, investors or investments" (Article 7.4(a)). The same agreement also includes a provision on fossil fuel subsidies, which indicates that "Parties recognise the need to ensure that, when developing public support systems for fossils fuels, proper account is taken of the need to reduce greenhouse gas emissions and to limit distortions of trade as much as possible" and stating that "the Parties share the goal of progressively reducing subsidies for fossil fuels" (Article 13.11.3).

A third type of provision is aimed at *deepening co-operation on climate change* between the parties to the agreement. Such provisions can usually be found in the "environment" or "sustainable development" chapters or articles of RTAs. These provisions include general commitments to enhance efforts to address climate change, including through cooperation between the RTA parties, and reaffirmations of existing commitments under the climate treaties. These provisions, even though they are usually non-binding, can be seen as a signal of the importance of addressing climate change by the parties to RTAs.

12 An example can be found in the EU-Colombia-Peru trade agreement. See Annex 2 for details.

Some provisions are more specific, however. For instance, Article 19.8.2 of the Korea-Peru Free Trade Agreement provides that each party "within its own capacities, shall adopt policies and measures on issues such as: (a) improvement of energy efficiency; (b) research, promotion, development and use of new and renewable energy, technologies of carbon dioxide capture, and updated and innovative environmental technologies that do not affect food security or the conservation of biological diversity; and (c) measures for evaluating the vulnerability and adaptation to climate change". This provision highlights the importance of specific issue areas for co-operation related to both climate-change mitigation and adaptation. In addition, it requires parties to adopt policies and measures, which can be seen as a commitment going beyond the UNFCCC, although the way in which the provision is formulated softens this commitment with phrases such as "within its own capacities" and "issues such as". This type of provision also includes co-operation provisions on a range of specific issues, including adaptation, carbon markets, technologies (including specific technologies such as cleaner fossil fuels or electric vehicles), forests and agriculture. Depending on the specific mandate and, most importantly, budget allocations by the parties involved, such provisions can form the basis for subsequent technical co-operation, information exchange, capacity building, and so on.

Existing RTAs thus contain a variety of climate-related provisions, which could potentially be diffused to other RTAs. However, the precise implications of some of the provisions is not always clear. Some argue that existing provisions already offer significant scope for pursuing climate-friendly policies and measures. For instance, Gehring et al. (2013) posit that provisions on co-operation in the area of renewable energy can be interpreted so as to support subsidies for the development of clean energy technology, and that provisions on co-operation on sustainable forest management can provide the basis for finance for addressing the carbon emissions from deforestation and forest degradation.

Although an in-depth legal analysis of the implications of these various provisions is beyond the scope of this study, it is important to remember that the provisions need to be read in the context of the entire agreement. Moreover, it is also important not to read too much into provisions that are broadly formulated (e.g. generally specifying co-operation in the area of climate change, or promoting renewable energy without reference to the specific renewable energy source). In addition, many provisions are reaffirming commitments made elsewhere, including in the context of the climate treaties. For instance, the EU-Colombia-Peru Free Trade Agreement (as well as other RTAs) suggests that [t]he Parties reaffirm their commitment to effectively implement in their laws and practices […] the Kyoto Protocol to the United Nations Framework Convention on Climate Change adopted on 11 December 1997" (Article 270.2). As long as they are affirmations – as opposed to new commitments to adopt laws and policies to meet certain goals – they are hortatory statements rather than legally binding commitments to which an RTA's dispute-settlement mechanism (if this covers environmental provisions in the first place) applies.

5. Promoting climate and trade goals through regional agreements

This chapter brings together the various threads explored in the previous chapters by asking the question: what kind of regional approaches can be envisaged that promote both trade and climate change goals? Drawing on the academic literature on climate change and trade overlaps, as well as on climate clubs, and building on existing provisions in RTAs discussed in Chapter 4, it discusses various possibilities in this regard (Section 5.1). It then outlines several lessons from the trend towards regionalism in trade governance for moving forward (Section 5.2).

5.1 Incorporating climate-change objectives in regional agreements

Climate change can be considered in regional agreements by "mainstreaming" the transition to a low-carbon economy in the core parts of an agreement (e.g. by removing barriers to the trade in goods and services that may have a direct or indirect impact on emission reductions), and also through the crafting of provisions that are aimed at creating climate change benefits. With regard to the latter, and corresponding to the third type of climate-related provisions discussed in Section 4.2, regional agreements could help achieve climate goals through further facilitating trade and investment, i.e. addressing the types of issues that are also covered by the WTO Agreements. As noted in Chapter 4, some existing RTAs already contain a broad commitment to liberalise trade in environmental (or low-carbon) goods or services. Furthermore, APEC members already agreed in 2012 to reduce tariffs for 54 environmental goods by 2015, including climate-relevant goods such as wind turbines and photovoltaic solar cells and modules (APEC, 2012; see also Sugathan and Brewer, 2012; Vossenaar, 2013).

There may be possibilities to further promote the liberalisation of goods and services through existing or new trade agreements (e.g. ICTSD, 2011). One possibility in this regard is including environmental goods whose liberalisation can lead to significant climate benefits. For instance, the APEC list does not include certain hydropower-related goods.[13] In addition, it may be possible to broaden the scope of trade agreements to other issue areas, including services and non-tariff barriers. It is increasingly acknowledged that trade in services related to climate change can play an important role in complementing trade in environmental goods related to climate change (e.g. Steenblik and Geloso Grosso, 2011), and RTAs could play a role in this regard.

Trade agreements could also seek to reduce non-tariff barriers that lead to climate benefits. Such barriers can arise from unnecessarily burdensome regulations, or regulations that reference standards that differ widely from international norms. Trade agreements could provide for the alignment of such measures, ranging from mutual recognition of conformity assessment procedures (i.e. the process through which it is ensured that products have met a standard), via mutual recognition of the equivalence of standards, to regulatory convergence, for instance through the harmonisation of standards (Holzer and Cottier, 2015). To ensure compatibility with WTO rules, it would be important for countries considering doing this to pay due regard to international norms (Holzer and Cottier, 2015). Parties to an RTA could agree to make the highest existing standards their common minimum standards (Frey, 2015).

13 Although, as Sugathan and Brewer (2012) note, this may be difficult given that some of these products are "dual-use" products, i.e. they can be used for both environmental and non-environmental purposes.

Another non-tariff barrier that could be further addressed through trade agreements is subsidies. In the last decade, a range of political commitments have been made to rationalise and/or phase out "inefficient" fossil fuel subsidies, including through the G20, APEC and the 2015 Sustainable Development Goals. Most recently, the G7 suggested that all countries should eliminate all fossil-fuel subsidies by 2025 (G7, 2016). Chapter 3 mentioned that the Singapore-EU Free Trade Agreement already includes a statement of intention to reduce fossil-fuel subsidies. Yet there may be scope for further provisions. Some observers have suggested to include fossil-fuel subsidies in a "prohibited" category in RTAs (Porterfield and Stumber, 2014). To put this in practice, however, it would be necessary to agree on the exact type of subsidies (e.g. whether just producer, just consumer subsidies, or both) the prohibition applies to. A more modest proposal would be to strengthen the transparency of fossil-fuel subsidies, by establishing clear reporting requirements (e.g. by following the reporting template developed by the OECD, 2013 & 2015), and including a mechanism to ensure compliance with those requirements. Provisions on fossil-fuel subsidies could make specific reference to the socio-economic consequences of reducing fossil-fuel subsidies (similar to the EU-Singapore Free Trade Agreement) and promote measures to protect the poor (i.e. providing a "safety net") (Porterfield and Stumberg, 2014).

As a corollary of fossil fuel subsidies, a trade agreement could also offer further clarity on renewable-energy subsidies (Howse, 2014; Meléndez-Ortiz, 2016). Importantly, however, such an agreement would only bind the parties to the RTA, and could not in any way change the rights and obligations of other WTO members.

Investment agreements and related provisions in RTAs can also play an important role in promoting climate change objectives. Careful drafting to clarify a government's right to regulate for legitimate public purposes, particularly with regards to "indirect expropriation" and the standard of "fair and equitable treatment", coupled with domestic climate regulations drafted and deployed in a non-discriminatory manner, can effectively serve to balance environmental objectives with investor protections (Firger and Gerrard, 2012; Porterfield and Gallagher, 2015). Correspondingly affording investors access to impartial investor-state dispute settlement facilities can advance the global goal of creating fair and transparent markets that promote low-carbon investments. Investment incentives that include transparency, predictability, and policy stability effectively encourage low-carbon investment.

Another issue area where there is scope for further provisions in trade agreements is climate-friendly government procurement. The WTO's plurilateral Agreement on Government Procurement generally leaves ample scope for governments to purchase low-carbon goods or select providers with climate-friendly credentials. Moreover, the 2012 revision of the Agreement introduced a new work programme on the treatment of sustainable procurement, which, among others, will discuss the objectives of sustainable procurement, the ways in which it is integrated in national and sub-national policies, and the ways in which sustainable procurement can be made consistent with the principle of "best value for money" and international trade obligations. Provisions in regional trade agreements could explicitly expand the scope for authorities by allowing public authorities to take climate-change considerations into account in the technical specifications, requirements for tenderers, award criteria, or the performance of the contract (van Asselt et al., 2006; Frey, 2015).

Agreements between countries seeking to link each other's emissions trading systems or intending to establish a carbon-market club (see Chapter 3) could also agree on

provisions related to carbon markets. This could include specifying the nature of emissions allowances under the trade agreement, for instance indicating that such allowances would not be considered to be goods or services.

Regional agreements could also support climate goals through institutional and procedural measures. As a variant of what is already practiced in current agreements, institutions could be asked to deal with specific climate-related questions, comparable to the climate-change committee proposed by Epps and Green (2010). This could be done either by establishing a separate climate change committee, or by addressing climate-related questions under the umbrella of an environment committee. Existing RTAs already provide for environmental bodies, such as the Commission on Environmental Cooperation under the NAAEC or the Canada-Peru Committee on the Environment, which in practice have already addressed climate-related questions. Related to this, the notification of climate-related trade measures could "allow transparency of domestic policies and possibly both lead to reduced incentives to take protectionist measures … and reduce the number of such disputes as concerns can be addressed earlier in the process" (Epps and Green, 2010: 255).

In addition to trade liberalisation, regional agreements could strengthen climate-change co-operation by covering the types of issues that are not directly covered by the multilateral trading system. As discussed in Chapter 4, existing RTAs increasingly contain provisions encouraging co-operation on climate-specific issues. In addition, Chapter 3 has shown that existing climate clubs likewise seeks to promote co-operation between countries (as well as non-state actors). Climate-change co-operation can take many forms, and ultimately depend on the priorities of the partnering countries. For instance, countries interested in developing their renewable energy industry may prefer to strengthen co-operation on the R&D of specific renewable energy technologies; countries interested in carbon pricing may want to provide for strengthened co-operation on planning and implementing carbon markets; countries interested in forest protection and climate change may wish to co-operate on measures to enhance forest-carbon sinks; and countries interested in strengthening resilience to climate impacts may emphasise building adaptive capacity.

Nevertheless, going beyond some of the existing RTA provisions, the mandate for co-operation could be strengthened by clarifying on which issues countries will co-operate. For instance, Chapter 4 mentioned that some RTAs mention specific types of technologies (e.g. electric vehicles). This practice could be taken up in other agreements as well. In addition, the type of activities forming part of the co-operation could be spelled out in some level of detail. For instance, co-operation can take the form of financing, R&D activities, pilot projects, information exchange, workshops, training, or awareness-raising. Some RTAs already mention these types of activities, whereas others remain unclear about the modalities of co-operation. Clarity about co-operation would not necessarily need to be provided in the RTA itself, but could also be developed through a subsequent programme of work or another document outlining the activities to take place. In addition to clarifying the mandate, specific and predictable budget allocations could help ensure that the activities will be carried out as planned. Table 2 offers an overview of the various ways in which regional agreements can contribute to climate change and trade goals.

Table 2. Summary of ways in which regional agreements could further help to achieve trade and climate goals

Facilitating trade and investment	
Trade in goods	Include liberalisation of environmental goods Include environmental goods with significant climate benefits
Regulatory standards	Mutual recognition of conformity assessment procedures Mutual recognition of the equivalence of standards Regulatory convergence
Subsidies	Include fossil fuel subsidies in "prohibited" category Improve transparency of fossil fuel subsidies by establishing a reporting mechanism Include "safety net" provision Make certain types of renewable energy subsidies non-actionable Offer clarity on renewable energy subsidies
Investment	Clarify government's right to regulate for legitimate public purposes and carefully draft key investment agreement obligations (e.g. "indirect expropriation", "fair and equitable treatment") to capture this balance Include transparency, predictability, and policy stability as key elements of low-carbon investment incentives
Government procurement	Expand scope for climate change considerations in technical specification, requirements for tenderers or award criteria
Carbon markets	Specify the legal nature of emissions allowances
Institutional setting	Create a climate change committee or discuss under the umbrella of environment committee
Procedures	Provide for notification of climate-related trade measures
Enhancing climate change co-operation	
Mandate	Establish clear mandate for co-operation (specifying the topics and/or activities) Clarify mandate through subsequent work programme
Budget	Allocate specific and predictable budget to climate change co-operation activities

To the extent an RTA seeks to establish durable co-operation on climate change, the boundaries between RTAs and existing, non-trade-oriented climate initiatives may start to blur. For instance, an RTA between two parties interested in pursuing carbon markets may specify that such countries will co-operate on carbon markets, referring to the co-operative approaches or sustainable-development mechanism of Article 6 of the Paris Agreement (in a way similar to the reference to the Clean Development Mechanism in the Japan-Mexico Economic Partnership Agreement). Yet many co-operative activities – information exchange, pilot projects, technical and political dialogue – related to carbon markets also take place outside of the auspices of trade agreements, and are undertaken bilaterally or in the context of initiatives such as the World Bank's Partnership for Market Readiness and the more recent Carbon Market Platform and Carbon Pricing Leadership Coalition (see Annex 1).

Nevertheless, there may still be advantages to including specific co-operation provisions in RTAs. For instance, including climate considerations may be facilitated by the package-deal approach to the negotiation of RTAs. Moreover, given that RTAs build on existing economic relationships, it may be easier to incorporate co-operative activities in the area of climate change that can build on those relationships. Furthermore, in some cases the substance of co-operative activities (e.g. clean energy technologies) may, at some stage, require trade-related measures (e.g. harmonisation of technology-specific standards).

Regional agreements may seek to address both to liberalise trade and achieve other forms of co-operation. However, to the extent RTAs and climate clubs remain separate, it seems sensible to achieve a division of labour, making use of the respective strengths of each type of regional approach. For climate clubs, one of the attractions may be that they do not necessarily have to be legally binding or that they can involve non-state actors.

In addition to RTAs, climate-related provisions could also be included in a plurilateral trade agreement. Plurilateral agreements can be either inclusive or exclusive (Draper and Dube, 2013). Inclusive or "critical-mass plurilaterals", such as the ITA (as well as the planned Environmental Goods Agreement), liberalise trade on an MFN basis, extending benefits to all WTO members. In an exclusive plurilateral agreement, such as the Agreement on Government Procurement, only members accrue the benefits of liberalisation. Outside of the climate-change context, plurilateral agreements have been proposed as a possible alternative that "keep the umbilical cord to the WTO intact" (Mavroidis and De Melo, 2015: 233).

5.2 Moving forward: lessons from regional trade governance

This section offers a few broad lessons from the discussions on regionalism in trade governance that may be informative for the further evolution of regionalism in the context of climate change governance.

Lesson 1: Start small

Many scholars and practitioners suggest that the origins of the GATT holds lessons for the development of the climate-change regime (e.g. Reinstein, 2004; Antholis, 2009; Barrett, 2010b; Victor, 2011). Specifically, the fact that the GATT started small, with a group of 23 countries, and incrementally moved towards a multilateral system comprising the world's major trading nations, is seen as an example for other forms of international co-operation. As Chapter 2 discussed, the increase in RTAs has been welcomed by some as a way to move forward in the absence of progress under the WTO, including through broadening the scope of co-operation and deepening co-operation. Likewise, the idea behind critical-mass plurilateral trade agreements is that they involve a limited number of key countries whose participation is essential to move forward and which can attract participation by other members.

Similarly, the development of regional or limited-membership agreements on climate change among smaller groups of countries could lead to progress at the multilateral level (Victor, 2011; Urpelainen, 2013). In addition to the smaller number of countries, it has been suggested that framing the problem more narrowly can be beneficial. This is, for instance, why Victor et al. (2012) suggest focusing on short-lived climate pollutants as a "climate threat we can beat". These suggestions are borne out in practice, as shown in Chapter 3 and Annex 2, with existing limited-membership coalitions focusing on more narrowly defined issues such as carbon markets, fossil-fuel subsidies, short-lived climate pollutants, or specific clean-energy technologies.

By starting small, countries can keep the costs of creating a new venue for international co-operation manageable (Stewart et al., 2013a). There may be differences depending on the type of co-operation, however. For instance, the costs of co-operation between a small group of countries on R&D related to clean-energy technology may be small and more easily shared, and the initial costs of a trade liberalisation agreement may be limited if it involves a critical mass of trading nations. However, other types of co-operation may

involve more substantial costs from the outset, and may therefore best be carried out under the auspices of existing international organisations (Stewart et al., 2013a).

Starting small could mean building on existing relationships forged through the negotiation and implementation of RTAs. To the extent that trade measures are contemplated in an agreement, their compatibility with the trading system could be considered and discussed more easily in a forum that includes trade specialists. Ultimately, however, the specific legal architecture for the agreement will depend on the subject matter of co-operation. For trade-related measures, a legally binding agreement could be adopted to provide for certainty. However, in other cases, a non-legally binding agreement, offering for more flexibility and possibly opening up to participation to non-state actors, may be preferred. Even if a legally binding agreement is chosen, it can be accompanied by a forum to discuss co-operation, as highlighted in the previous section.

Lesson 2: Keep the door open to multilateralism

While it can thus be beneficial to start small, the evolution of the GATT also suggests that scaling up over time may be desirable. In other words, if there is no critical mass from the outset, it is important to work towards obtaining it (Keohane et al., 2015). In the context of contemporary regional trade governance, this relates to the ongoing debate on how to multilateralise regional trade agreements (Baldwin, 2014). One suggestion in this regard has been to develop the WTO into a "club of clubs", which accommodates and welcomes the emergence of plurilateral trade agreements, subject to certain conditions (Lawrence, 2006). However, current rules still make it challenging to connect exclusive plurilaterals to the trading system, as Article X.9 of the WTO Agreement requires that such agreements can only be added to the relevant Annex 4 by consensus of all WTO members. If negotiating partners intend to develop their agreement into a plurilateral agreement, this requirement therefore needs to be taken into account in the design of the agreement from the very start.

Multilateralisation can allow for the scaling up of what has been agreed at the regional level. To the extent that climate measures are included in plurilateral agreements, the above-mentioned suggestions for plurilaterals may also lead to the multilateralisation of measures aimed at climate protection. As plurilateral agreements, there would be a closer connection with the WTO system, which could be beneficial for climate-related trade agreements. For instance, Bacchus (2016) suggests that members of a plurilateral agreement could agree on a set of binding rules, which could subsequently be enforced through the WTO's dispute-settlement mechanism in the same way that this mechanism also applies to the Agreement on Government Procurement.

However, to the extent the previous options are infeasible – i.e. climate change would be addressed through RTAs rather than plurilateral agreements – there may still be ways in which climate measures can be scaled up. Holzer and Cottier (2015) suggest that multilateralising such standards can be achieved through: (1) unilateral adoption of such standards by other countries (although they suggest this potential is limited in case other countries have significant market power); (2) plurilateralisation through the inclusion of such standards in other RTAs; and (3) multilateralisation through the WTO (which is more likely if the standards are adopted by major trading nations).

Multilateralising, in the context of the present study, can also involve the international climate-change regime. Limited-membership coalitions can be connected to the international climate regime in various ways, depending on the type of coalition. For instance, coalitions focusing on technology co-operation could be linked to the UNFCCC's

Technology Mechanism, established in 2010. The mechanism's Technology Executive Committee is already mandated to "establish co-operation with relevant international technology initiatives, stakeholders and organisations, and to promote coherence and co-operation across various technology activities both within and outside of the UNFCCC" (UNFCCC, 2011: para. 121(f)). Coalitions focused on carbon markets have interactions with the market mechanisms emerging under the Paris Agreement. Coalitions could be informally linked to the UNFCCC, for instance by pursuing operational activities connected to UNFCCC (or Paris Agreement) provisions on an ad hoc basis. Parties to the UNFCCC – or the Paris Agreement – may also independently adopt the outputs of collaboration between a sub-set of countries.

Lesson 3: Be transparent

The relationship between the multilateral regime and regional approaches brings us to a third lesson: the importance of transparency in regional agreements. One of the main criticisms from civil society directed at RTAs has been that they are often negotiated behind closed doors. Likewise, one of the concerns for exclusive plurilateral agreements is that the implications for non-members are not always clear (Draper and Dube, 2013). Similarly, in the climate context, the benefits of climate clubs for achieving global goals can be unclear, and they have at times been seen as unwanted distractions from the multilateral negotiations (McGee and Taplin, 2009).

Transparency about the intentions of club members, actions taken, and results achieved can help build trust between club members and non-members. Moreover, it can help build momentum by showcasing the climate action that is taking place within the regional agreement, highlighting "early wins". Transparency can involve the monitoring of progress towards regime-specific goals as well as the global greenhouse-gas emission reductions achieved (Stewart et al., 2013a). This can be done through regular reporting, as well as by carrying out regular reviews (either by peers or by independent experts) of the actions taken and results achieved.

6. Conclusions

Regionalism is a pervasive feature of global governance, and the issue areas of trade and climate change are no exception. This study has sought to draw out some of the implications of regionalism for the interaction between trade and climate policy, by examining the implications of regional climate governance for international trade on the one hand, and the implications of regional trade governance for climate change on the other. It has further pointed to possible ways forward for regional approaches with a view to contributing to both trade and climate-change objectives.

Chapter 2 looks back at the history of regionalism, showing how, following an initial wave of regionalism in the middle of the 20th century, a renewed trend towards regionalism can be observed since the mid-1980s. This trend is particularly visible in the field of trade governance, where the multilateral trading system has been flanked by an increasing number of regional trade agreements. Although some see this development as a potential "stumbling block" to the international trade regime, others believe regional agreements can serve as "building blocks" for future multilateral trade governance. Regionalism has also been a prominent feature of environmental governance. Regional environmental agreements can sometimes offer a better fit with the environmental problem at hand, and may also present a way forward in the absence of progress at the multilateral level.

The latter rationale has also been invoked in the context of limited-membership coalitions for climate change co-operation, which are examined in Chapter 3. Although initially these coalitions were viewed with some suspicion, as they were advertised as alternatives to a multilateral approach, more recently they have come to be viewed as complementary and supporting of the international climate regime. A specific type of limited-membership coalitions, climate clubs, has received a significant amount of attention in the literature, and has been proposed as a way forward for climate change co-operations. Such climate clubs have five distinct features, namely: (1) limited membership; (2) they involve co-operation on climate-related activities; (3) they confer exclusive benefits on members (but also confer non-excludable benefits on non-members to the extent that they lead to additional climate-change mitigation); (4) they require a contribution from members; and (5) they usually require some form of monitoring and review.

Several proposals for climate clubs have been made in the literature, including technology-oriented climate clubs, carbon pricing clubs, trade liberalisation clubs, and sectoral clubs. Implementing some of these proposals, particularly those that identify exclusive benefits for the club members or impose trade sanctions on non-members, may clash with international trade law. However, while trade measures are contemplated in some of these proposals, it is important to note that the limited-membership coalitions we can observe in practice do not include such measures. In short, a careful distinction should be drawn between the climate clubs that have been proposed in theory and the coalitions that can be observed in practice, although the latter may, over time, evolve into the former.

Chapter 4 offers an overview of the current state of play on the use of environmental provisions in existing RTAs that are relevant to addressing climate change. Building on existing surveys of environmental provisions in RTAs, it highlighted three types of provisions of relevance for pursuing climate change objectives, namely general provisions on the environment, provisions pursuing the liberalisation of climate-related goods and services, and provisions on climate-related co-operation. The chapter showed that a wide variety of provisions is already being used in existing RTAs, which could be further diffused in other RTAs.

Lastly, Chapter 5 draws attention to the many ways in which regional agreements can further contribute to achieving both trade and climate change goals. This can take place through provisions related to the trade in climate-related goods and services, regulatory standards, subsidies, government procurement and investment, as well as through institutional and procedural measures. In addition, regional agreements could strengthen climate-change co-operation, for instance focusing on specific technologies or the further development of carbon markets. Climate change could be addressed under the auspices of trade agreements (including RTAs and plurilateral agreements), but could also be taken up as part of the existing or proposed climate clubs discussed in Chapter 3.

The chapter also pointed to lessons for the way forward for regional agreements. First, the experience with the evolution of the trading system suggests that it may be useful to start small, both in terms of the number of countries involved and in terms of the subject matter. Second, while a regional approach may allow states and non-state actors to move forward, it helps to be mindful of the connections with multilateral regimes. For agreements that involve climate-related trade measures that means considering options for multilateralising what has been agreed at the regional level, either directly through plurilateral agreements linked to the WTO, or indirectly through the diffusion of what has been agreed in RTAs.

In addition, the connection to the multilateral climate regime deserves attention. In this regard, connections can be made, among others, to the climate regime's technology mechanism and its rules and institutions related to carbon markets. Third, the experience with trade agreements as well as climate clubs so far suggests that it is helpful to be transparent in the negotiation and implementation of regional agreements, with a view to building trust between members and non-members, and showcasing achievements.

Finally, the study points to several knowledge gaps. First, although information about t environmental provisions related to climate change is available, it is not always clear what the effect is of such provisions in practice. Specifically, further information could shed light on the activities undertaken by RTA parties to implement climate-related co-operation provisions in RTAs. Second, although there are many ways in which climate-change considerations could be incorporated in RTAs, their feasibility in practice remains unclear. As Chapter 4 pointed out, there are various barriers to the adoption of environmental provisions in RTAs, and these barriers may also hold for integrating climate-change considerations. Beyond the political feasibility, their compatibility with international trade law and international climate change law deserves further scrutiny. Third, although general lessons can be learned for the evolution of climate clubs in theory, such lessons need further elaboration and specification in the context of concrete examples of (existing and proposed) limited-membership coalitions.

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Annex I: Climate clubs in practice

Carbon Market Platform

The Carbon Market Platform is an initiative launched by Germany during its G7 Presidency. The aim of the Platform is to facilitate an informed and open strategic dialogue between countries on climate policies. The Platform seeks to offer a forum to identify policies and institutional gaps at the national and international levels, and allow for new co-operative and co-ordinated approaches to be developed. The Platform may provide political impetus for the development of carbon markets globally, keeping in mind national preferences. Although initially open to the G7 only, participation has opened up to other countries.

See *www.bmub.bund.de/fileadmin/Daten_BMU/Download_PDF/Klimaschutz/kohlenstoffmarkt_handout en_bf.pdf and www.env.go.jp/press/files/jp/103219.pdf.*

Carbon Pricing Leadership Coalition (CPLC)

Bringing together a variety of actors that all agree on the importance of carbon pricing for climate policy, the Carbon Pricing Leadership Coalition aims to strengthen the basis for the use and expansion of carbon pricing. The CPLC was launched on the first day of COP 21 in Paris, although preparations had been in place since 2014, when a group of actors, led by the World Bank called for stronger action to price carbon. Participants include national and subnational governments implementing emissions trading systems or carbon taxation, as well as broad set of business and civil society actors. The coalition aims to build evidence for how carbon pricing-could work, mobilise business support, and through a dialogue help specific jurisdictions implement policies.

See *www.carbonpricingleadership.org*.

Clean Energy Ministerial

The Major Economies Forum (see below) in 2009 launched a Global Partnership on transformational low-carbon, climate-friendly technologies. As part of the Global Partnership, countries drafted action plans to identify and share best practices for several clean-energy technologies, which in turn formed the basis for the first Clean Energy Ministerial in 2010. The Clean Energy Ministerial has continued with this focus on technology initiatives, and now hosts 12 activities in the broad area of clean energy, including energy efficiency, clean-energy supply and clean-energy access. The initiative brings together 23 countries as well as the European Commission. Engagement with non-state actors takes the form of public-private roundtables including business, civil society and others.

See *www.cleanenergyministerial.org.*

Climate and Clean Air Coalition (CCAC)

The Climate and Clean Air Coalition, created in 2012, aims are to raise awareness on short-lived climate pollutants (including black carbon, methane and HFCs), enhance and develop actions at the national and regional level, promote best practices, improve scientific understanding, and mobilise resources for actions. The CCAC is a non-legally binding, government-led, public-private partnership. To date, 49 countries (as well as the European Commission) have joined the coalition, including both developed and developing countries (although major economies such as Brazil, China, India and South Africa are not partners). The Coalition is administered by UNEP, and provides for the active participation of non-governmental organisations, including international organisations (e.g. the World Health Organization, the United Nations Development Programme and the World Bank), environmental and scientific organisations, and the private sector. The CCAC encourages actions by the partners through initiatives focused on: (1) heavy-duty diesel vehicles; (2) brick production; (3) the municipal solid waste sector; (4) promoting HFC alternatives; (5) methane and black carbon emissions from oil and natural gas production; (6) agriculture; and (7) household cooking and domestic heating. In addition, three crosscutting initiatives have been established for financing, national planning, and regional assessments.

See *www.ccacoalition.org*

Friends of Fossil Fuel Subsidy Reform

Initiated by New Zealand in 2010, the Friends of Fossil Fuel Subsidy Reform (FFFSR) is an informal group of nine countries (Costa Rica, Denmark, Ethiopia, Finland, New Zealand, Norway, Sweden, Switzerland, Uruguay) advocating the reduction of fossil fuel subsidies worldwide, launched in the wake of international pledges by the G20 and APEC to phase out fossil-fuel subsidies. The FFFSR work together with international organisations (including the OECD, the IEA, and the World Bank), non-governmental organisations (including the International Institute for Sustainable Development's Global Subsidies Initiatives) and other clubs (including the G20; see below). In Paris in 2015, the Friends released a Communiqué on fossil-fuel subsidy reform, which highlights three principles for subsidy reform, namely: (1) communication and transparency about the merits of subsidy policies and reform timetables; (2) ambition in the scope and timeframe for implementing reforms; and (3) targeted support to ensure reform implementation is done taking into account the interests of the poor.

See *http://fffsr.org.*

Global Methane Initiative (GMI)

The Global Methane Initiative evolved from an earlier public-private partnership, Methane to Markets, which was launched in 2004. The initiative has been joined by 42 countries from the developed and developing world, as well as the European Commission. The GMI aims to reduce methane emissions, enhance methane recovery, and use methane as a clean energy resource. The initiative is country-driven, with its Steering Committee consisting of country representatives. Through the GMI, partner countries voluntarily commit to developing improved emissions estimates; promoting public-private collaboration on methane emission reductions, recovery or use; identifying and address barriers to investments; and developing and implementing action plans with concrete activities. In addition to the partner countries, a wide range of non-state actors – including

the private sector and non-governmental organisations – participate through a "Project Network".

Global Research Alliance on Agricultural Greenhouse Gases

The Global Research Alliance on Agricultural Greenhouse Gases was launched at the climate conference in Copenhagen in 2009 by 21 countries, and began its work in 2011. Since then, its membership has grown to 46 countries. In addition to states, the Alliance has a range of partners, including development banks and international organisations. The Alliance seeks to promote voluntary action to enhance cooperation and investment in research activities that address the emissions intensity of agriculture, contributing to both climate change and food security objectives. The Alliance works through four research groups, focused on croplands, livestock, paddy rice and on integrative issues.

See *http://globalresearchalliance.org*.

Greenhouse Gas Protocol

The Greenhouse Gas Protocol is a widely-used set of accounting and reporting standards, and accompanying tools, which can help governments, businesses and other organisations measure their emissions. The standards were developed by the World Resources Institute, in partnership with the World Business Council on Sustainable Development. There is no membership: public and private actors are free to use the standards when they want.

See *www.ghgprotocol.org.*

Group of 20 (G20)

The Group of 20 (G20) is a coalition of large economies that is primarily focused on international finance and economic development. It was created in 1999 in the wake of the financial crisis in Asia in 1997. Its membership includes the G8 countries (Canada, France, Germany, Italy, Japan, Russia, the UK and the US), as well as other major economies (Brazil, China, India, Mexico and South Africa Argentina, Australia, Indonesia, Saudi Arabia, South Korea, Turkey and the EU). With respect to climate change, the G20 has pledged to phase out inefficient fossil-fuel subsidies, mobilise climate finance, and address hydrofluorocarbons (HFCs). With respect to fossil-fuel subsidies, the G20 has instituted an annual reporting mechanism and has started a series of volunteer peer reviews.

See *www.g20.org.*

IEA Technology Collaboration Programmes

Based on a series of Implementing Agreements, the Technology Collaboration Programmes of the International Energy Agency (IEA) allows for the collaboration between government and industry actors in a range of energy-related areas. The programmes include cross-cutting programmes, such as the Climate Technology Initiative, as well as programmes focused on energy end-use technologies (in the building, electricity, industry, and transport sectors), fossil fuels, fusion power, and renewable energy technologies. The focus of these programmes is to promote technology R&D and deployment. The activities, which vary depending on the specific programme, include research, technology assessment, and information exchange. The membership of the programme extends beyond IEA membership, and includes partner countries. as well as

international and regional organisations. The benefits of membership include information sharing, strengthened capacities, and harmonising of technical standards.

See *www.iea.org/tcp/*.

International Partnership for Mitigation and MRV

The International Partnership for Mitigation and MRV was launched following the Petersberg Climate Dialogue in 2010 by Germany, South Africa and South Korea. The partnership aims to support an information exchange between government officials on different types of climate change mitigation actions (including nationally appropriate mitigation actions, NDCs and low-emissions development strategies), as well as measurement, reporting and verification (MRV). The partnership brings together about 90 countries from both the developed and developing world, and is supported by several non-state actors.

See *http://mitigationpartnership.net*.

International Solar Alliance

Spearheaded by India, the International Solar Alliance was launched at COP21 as a coalition of "sunshine countries" (i.e. countries rich in solar resources), with a view to a providing a collaborative platform for state and non-state actors seeking to increase the deployment of solar energy technologies. Although further details have yet to be outlined, potential activities include helping member countries draft solar energy policies, sharing of best practices, and the development of standards and protocols for solar energy systems.

See *http://isolaralliance.com/*.

LEDS Global Partnership

The Low Emission Development Strategies (LEDS) Global Partnership brings together 160 countries, as well as a range of non-state actors, with a view to improving the implementation of low-emission, climate-resilient development strategies. The partnership includes three regional networks (for Africa, Asia, and Latin America and the Caribbean), as well as six theme-specific working groups on (1) agriculture, forestry and land use, (2) benefit assessment of LEDS, (3) energy, (4) finance, (5) subnational integration of LEDS, and (6) transport. Its activities support policy-makers and practitioners in developing and implementing LEDS.

See *http://ledsgp.org*.

Major Economies Forum (MEF)

The first Major Economies Meeting on Energy Security and Climate Change was held in September 2007 at the initiative of US President George W. Bush. President Obama re-launched the process as the Major Economies Forum on Energy and Climate (MEF) two years later. The MEF brings together 17 major economies, accounting for over 80% of global emissions. In addition to these countries, representatives from other governments and international organisations are invited on an ad hoc basis. The MEF's mission is to facilitate a dialogue to achieve success in the UNFCCC, and explore concrete climate change mitigation initiatives. It offers a high-level political forum outside of the UNFCCC established solely to discuss climate change.

See *www.majoreconomiesforum.org/*.

Mission Innovation

Mission Innovation was launched at COP 21 by 20 countries (including Brazil, China, France, Germany, India, the United Kingdom and the US), which pledged to double governmental investment in clean energy R&D in the five years ahead. The initiative seeks to encourage private sector participation to facilitate the scaling up of clean energy technologies. To this end, it collaborates with its private-sector counterpart, the Breakthrough Energy Coalition, which is led by Microsoft-founder Bill Gates, and involves 25 high-profile investors and company leaders. The group has pledged to help fund early-stage clean energy initiatives that emerge from the Mission Innovation coalition. Mission Innovation will also involve the sharing of information on clean energy R&D between the participating countries.

See *http://mission-innovation.net*.

Partnership for Market Readiness (PMR)

The World Bank's Partnership for Market Readiness (PMR) brings together a range of countries working together to prepare countries for implementing carbon pricing policies, focusing on technical and institutional readiness. Eighteen of the partner countries are "implementing countries" where PMR-supported activities take place; 13 other countries are contributing donors. In addition to the partner countries, other countries or subnational jurisdictions and non-state actors can join (not in a decision-making capacity) either as technical partners or as observers. The activities of the PMR include financing activities to build readiness for carbon pricing at the country level, creating and exchanging knowledge and information on carbon pricing, piloting carbon pricing instruments, and a technical dialogue on carbon pricing instruments.

See *www.thepmr.org.*

Annex 2: Climate-relevant environmental provisions in regional trade agreements

Type of provision	Example	Implications
(1) General provisions on the environment, with relevance for climate change		
Preambular reference to environment	"Recognizing that economic development, social development and environmental protection are interdependent and mutually reinforcing components of sustainable development and that the economic partnership can play an important role in promoting sustainable development" (Japan-Brunei Economic Partnership Agreement)	Can be used to interpret an RTA's operational provisions
Reference to principle of common but differentiated responsibilities	"The Parties reiterate their commitment to address global environmental challenges, in accordance with the principle of common but differentiated responsibilities" (EU-Colombia-Peru Trade Agreement, Article 267.4)	Affirmation of commitment made elsewhere
Mutual supportiveness provision	"The Parties recognize the mutual supportiveness between trade and environment policies and the need to implement this Agreement in a manner consistent with environmental protection and conservation and the sustainable use of their resources" (Canada-Peru Free Trade Agreement, Article 1701)	Statement of fact that trade and environment policies are mutually supportive
Ensure high levels of environmental protection	"… each Party shall ensure that its own environmental laws and policies provide for and encourage high levels of environmental protection and shall strive to continue to improve those laws and policies" (US-Morocco Free Trade Agreement, Article 17.1)	Binding obligation to ensure high level of environmental protection
Enforce domestic environmental laws	"No Party shall fail to effectively enforce its environmental laws through a sustained or recurring course of action or inaction in a manner affecting trade or investment between the Parties" (TPP, Article 20.3.4)	Binding obligation to enforce environmental laws (including climate change laws)
Relationship with multilateral environmental agreements (general)	"The Parties acknowledge that nothing in the Agreement should prevent either Party from adopting or maintaining measures to implement the Multilateral Environmental Agreements to which it is a party, provided that such measures are not applied in a manner that would constitute a means of arbitrary or unjustifiable discrimination between the Parties or a disguised restriction on trade" (EC TTIP proposal, 6 November 2015, Article 10.5)	Clarifies legal relationship with multilateral environmental agreements
Clarifying scope of GATT Article XX for the purposes of the RTA	"The Parties understand that the measures referred to in Article XX (b) of the GATT 1994 include environmental measures necessary to protect human, animal or plant life or health" (CETA, Article 28.3.1)	Clarifies the mutual understanding of the parties that environment-related measures could fall under GATT Article XX exceptions
Broadening the application of GATT Article XX within the RTA	"For the purposes of Chapter 2 (National Treatment and Market Access for Goods), Chapter 3 (Rules of Origin and Origin Procedures), Chapter 4 (Textile and Apparel Goods), Chapter 5 (Customs Administration and Trade Facilitation), Chapter 7 (Sanitary and Phytosanitary Measures), Chapter 8 (Technical Barriers to Trade) and Chapter 17 (State-Owned Enterprises and Designated Monopolies), Article XX of GATT 1994 and its interpretative notes are incorporated into and made part of this Agreement, *mutatis mutandis*" (TPP, Article 29.1.1)	Broadens the application of GATT Article XX within the RTA to environment-related measures not just relating to the trade in goods

(2) Promoting trade and investment in climate-relevant sectors		
Liberalisation of trade and investment in climate-friendly goods and services	"The Parties shall pay special attention to facilitating the removal of obstacles to trade or investment concerning climate-friendly goods and services, such as sustainable renewable energy goods and related services and energy efficient products and services, including through the adoption of policy frameworks conducive to the deployment of best available technologies and through the promotion of standards that respond to environmental and economic needs and minimise technical obstacles to trade" (EU-Singapore Free Trade Agreement, Article 13.11.2)	General commitment to liberalize trade in climate-friendly goods and services
Promoting reduction of fossil fuel subsidies	"The Parties recognise the need to ensure that, when developing public support systems for fossils fuels, proper account is taken of the need to reduce greenhouse gas emissions and to limit distortions of trade as much as possible. While subparagraph (2)(b) of Article 12.7 (Prohibited Subsidies) does not apply to subsidies to the coal industry, the Parties share the goal of progressively reducing subsidies for fossil fuels. Such a reduction may be accompanied by measures to alleviate the social consequences associated with the transition to low carbon fuels. In addition, both Parties will actively promote the development of a sustainable and safe low-carbon economy, such as investment in renewable energies and energy efficient solutions" (EU-Singapore Free Trade Agreement, Article 13.11.3)	Affirms commitment to progressively reduce fossil fuel subsidies
(3) Deepening climate co-operation		
Further action on climate change (general)	"The Parties are resolved to enhance their efforts regarding climate change, which are led by developed countries, including through the promotion of domestic policies and suitable international initiatives to mitigate and to adapt to climate change, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions, and taking particularly into account the needs, circumstances, and high vulnerability to the adverse effects of climate change of those Parties which are developing countries" (EU-Colombia-Peru Trade Agreement, Article 275.2)	Statement of intent, reaffirming commitments made elsewhere
Further action on climate change adaptation	"The Parties also recognise that the effect of climate change can affect their current and further development, and therefore highlight the importance of increasing and supporting adaptation efforts, especially in those Parties which are developing countries" (EU-Colombia-Peru Trade Agreement, Article 275.3)	Statement of intent, reaffirming commitments made elsewhere
Implementation of climate treaties	"The Parties reaffirm their commitment to effectively implement in their laws and practices […] the Kyoto Protocol to the United Nations Framework Convention on Climate Change adopted on 11 December 1997" (EU-Colombia-Peru Trade Agreement, Article 270.2)	Reaffirming commitments made elsewhere
Adoption of policies and measures	"For promoting sustainable development, each Party, within its own capacities, shall adopt policies and measures on issues such as: (a) improvement of energy efficiency; (b) research, promotion, development and use of new and renewable energy, technologies of carbon dioxide capture, and updated and innovative environmental technologies that do not affect food security or the conservation of biological diversity; and (c) measures for evaluating the vulnerability and adaptation to climate change" (Korea-Peru Free Trade Agreement, Article 19.8.2)	Commitment to adopt policies and measures, with concrete examples
General co-operation on climate change	"… Parties shall cooperate to address matters of joint or common interest. Areas of cooperation may include, but are not limited to: energy efficiency; development of cost-effective, low emissions technologies and alternative, clean and renewable energy sources; sustainable transport and sustainable urban infrastructure development; addressing deforestation and forest degradation; emissions monitoring; market and nonmarket mechanisms; low emissions, resilient development and sharing of information and experiences in addressing this issue. Further, the Parties shall, as appropriate, engage in cooperative and capacity-building activities related to transitioning to a low emissions economy" (TPP, Article 20.15.2)	Provides broad basis for co-operation on climate change
Co-operation on market mechanisms	"Cooperative activities under this Article may include: … promotion of capacity and institutional building to foster activities related with the Clean Development Mechanism under the Kyoto Protocol to the United Nations Framework Convention on Climate Change, as may be amended, by means of workshops and dispatch of experts, and exploration of appropriate ways to encourage the implementation of the Clean Development Mechanism projects" (Japan-Mexico Economic Partnership Agreement, Article 147.1)	Provides basis for (voluntary) co-operation on market mechanisms

Co-operation on renewable energy and energy efficiency	"1. … the Parties recognise the importance of fostering forms of innovation that benefit the environment in all sectors of their economy. Such forms of eco-innovation include energy efficiency and renewable sources of energy 2. … the Parties agree to cooperate, including by facilitating support, in the following areas: … (b) projects related to energy efficiency and renewable energy; … (d) exchanges of information, know-how and experts; (e) awareness-raising and training activities; (f) preparation of studies and provision of technical assistance; (g) collaboration in research and development; and (h) pilot and demonstration projects" (EU-CARIFORUM Economic Partnership Agreement, Article 138)	Provides basis for co-operation on renewable energy and energy efficiency through variety of means
Co-operation on cleaner fossil fuels	"Increasing the use of cleaner fuels. The Parties will work to improve the environmental quality of fuels, especially diesel fuel and gasoline, used in their territories by providing joint training and technical assistance on a variety of fuels-related environmental issues" (Chile-US Free Trade Agreement, Annex 19.3(h)	Provides basis for co-operation on cleaner fossil fuels
Co-operation on climate-friendly technologies	"The Parties recognise that enhanced cooperation is an important element to advance the objectives of this Chapter, and commit to cooperate on trade-related environmental issues of common interest, in areas such as:… (e) trade-related aspects of the current and future international climate change regime, as well as domestic climate policies and programmes relating to mitigation and adaptation, including issues relating to carbon markets, ways to address adverse effects of trade on climate, as well as means to promote energy efficiency and the development and deployment of low-carbon and other climate-friendly technologies" (Canada-EU CETA, Article 24.12.1(e))	Provides basis for co-operation on the promotion of energy efficiency, low-carbon and other climate-friendly technologies
Co-operation on forest carbon sinks	"The aims of cooperation on forestry matters and environmental protection will be, but not limited to, as follows: … (c) improving the rehabilitation and sustainable management of forest with the aim of increasing carbon sinks and reduce the impact of climate change in the Asia-Pacific region" (China-Peru Free Trade Agreement, Article 162.1)	Provides basis for co-operation on forest carbon sinks
Co-operation on reduced emissions from deforestation and forest degradation (REDD+)	"… cooperation shall … (d) focus on the following activities: … (v) providing financial and technical support for mitigation action of ACP states in line with their poverty reduction and sustainable development objectives, including reducing emissions from deforestation and forest degradation and reducing emissions in the agricultural sector" (Cotonou Agreement, Article 32a)	Provides basis for co-operation on REDD+
Co-operation on agriculture	"(d) promote effective risk management in the agribusiness chains aiming to incorporate measures for adaptation and mitigation of climate change and variability" (China-Costa Rica Free Trade Agreement, Article 123.2(d))	Provides basis for co-operation on agriculture, taking climate considerations into account
Co-operation on trade-climate interface	"The Parties may initiate cooperative activities of mutual benefit in areas including but not limited to … cooperation on trade-related aspects of the current and future international climate change regime, including ways to address adverse effects of trade on climate, as well as means to promote low-carbon technologies and energy efficiency (EU-Singapore Free Trade Agreement, Article 13.10(f))	Provides basis for co-operation for dialogue on trade-climate interactions in context of UNFCCC