From Intention to Impact: Forestry-related Sustainability Provisions in Trade Agreements

by

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Author’s Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Forestry-related sustainability provisions in trade agreements are important policy instruments for aligning international trade with sustainable forestry management. This dissertation conducts a sector-specific analysis by first mapping the academic landscape on sustainability provisions in trade agreements using bibliometric methods. It then develops a classification framework that disaggregates forestry-related sustainability provisions based on their depth and coverage. Employing content and textual analysis together with a results-based conceptual model, the study evaluates both the design of forestry provisions and the outputs, outcomes and impacts of associated cooperative activities.

The findings reveal considerable variation in the scope and nature of forestry-related provisions across agreements. In addition, the study demonstrates that cooperative activities, when supported by strong institutions, adequate funding, capacity-building measures, and stakeholder participation, lead to measurable improvements in sustainable forest management. By integrating issue linkage theory and norm diffusion theory, this study explains how sustainability provisions can facilitate the internalization of sustainable development norms and influence trade practices. The results contribute to academic discussions and policy debates by providing a structured framework for assessing forestry-related sustainability provisions and offering recommendations to enhance their effectiveness in supporting sustainable forestry management.

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Dedication

Now to Him who is able to do exceedingly abundantly

above all that we ask or think, according to the power that works in us

Ephesians 3:20, NKJV

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List of Abbreviations

ACP: African, Caribbean, and Pacific Group of States

ATIBT: Association Technique Internationale des Bois Tropicaux (International Tropical Timber Technical Association)

CBD: Convention on Biological Diversity

CEC: Commission for Environmental Cooperation

CITES: Convention on International Trade in Endangered Species of Wild Fauna and Flora

COP: Conference of the Parties

EU: European Union

FAO: Food and Agriculture Organization

FLEGT: Forest Law Enforcement, Governance and Trade

FMUs: Forest Management Units

FPDCI: Forestry Provisions Depth and Coverage Index

FSC: Forest Stewardship Council

JPAC: Joint Public Advisory Committee

MC-SNIFFS: National Forestry and Wildlife Information System of Peru

MEAs: Multilateral Environmental Agreements

NGO: Non-Governmental Organization

OECD: Organisation for Economic Co-operation and Development

OSINFOR: Organismo de Supervisión de los Recursos Forestales y de Fauna Silvestre (Supervisory Body for Forest and Wildlife Resources - Peru)

PEFC: Programme for the Endorsement of Forest Certification

REDD+: Reducing Emissions from Deforestation and Forest Degradation

RTA: Regional Trade Agreement

SDGs: Sustainable Development Goals

SERFOR: Servicio Nacional Forestal y de Fauna Silvestre (National Forestry and Wildlife Service - Peru)

SFM: Sustainable Forest Management

TPA: Trade Promotion Agreement

UNFCCC: United Nations Framework Convention on Climate Change

USAID: United States Agency for International Development

USMCA: United States-Mexico-Canada Agreement

WTO: World Trade Organization

Chapter 1
Introduction

Sustainability provisions[1] in trade agreements aim to promote rather than hinder sustainable development (Cordonier Segger, 2021), yet their effectiveness remains contested. Debate persists as to whether these provisions generate tangible environmental and social outcomes or function primarily as symbolic commitments (de Andrade Correa & Lehmen, 2023; Kim et al., 2023). The rationale behind these provisions stems from concerns that unregulated trade exacerbates environmental degradation and social inequalities. Trade liberalization has been linked to deforestation, biodiversity loss, and carbon-intensive industrial expansion (Abman & Lundberg, 2020), prompting efforts to embed environmental and social provisions into trade agreements. In doing so, these provisions align trade policies with international frameworks such as Multilateral Environmental Agreements (MEAs) and the Sustainable Development Goals (SDGs) (Le Blanc, 2015; Stafford-Smith et al., 2017).

Numerous international accords, including the Marrakesh Agreement, the United Nations Framework Convention on Climate Change (UNFCCC), and Agenda 2030 along with a host of trade, investment and Multilateral Environmental Agreements, now include provisions requiring policy compatibility (Espa, 2023; Gehring, 2023; Messenger, 2024; Stafford-Smith et al., 2017). Consequently, most countries have pledged to integrate sustainable development into their trade efforts (Cordonier Segger, 2021). This commitment is evident in the preambles and other sections of recent trade agreements, which mark a shift from earlier agreements like NAFTA (where environmental provisions were confined to side agreements) to more recent treaties like the Comprehensive Economic and Trade Agreement (CETA) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), which incorporate sustainability provisions directly into their main texts (Morin, Dür, et al., 2018; Velut et al., 2022). Nevertheless, the extent to which these provisions yield measurable sustainability outcomes remains uncertain.

[1] Sustainability provisions in trade agreements refer to environmental and social commitments embedded within trade agreements that seek to ensure that trade liberalization does not come at the expense of sustainability objectives. These provisions typically address environmental protection, labor rights, and trade in environmentally friendly goods and services. While some scholars refer to them as environmental provisions and labor provisions separately (Marx et al., 2016), others adopt broader terms such as "trade and sustainable development provisions" (Velut et al., 2022) or "environmental and social provisions" (Berger et al., 2020). This thesis employs the term sustainability provisions to reflect their integrated approach, recognizing that environmental and social issues are interconnected within the framework of sustainable development.

Sustainability provisions cover a variety of issues, from climate change mitigation and biodiversity conservation to labor protections (Velut et al., 2022). Environmental provisions typically focus on non-derogation from domestic environmental laws, on compliance with international environmental agreements and encouragement of cooperative initiatives (Jinnah & Morgera, 2013; Morin, Dür, et al., 2018), while labor provisions focus on improving working conditions and preventing exploitation in line with International Labour Organization (ILO) standards (Postnikov & Bastiaens, 2014). Although they are now increasingly adopted, questions persist regarding their ability to drive meaningful results. Some scholars argue that the lack of robust enforcement mechanisms limits their impact (Bronckers & Gruni, 2019; Corvaglia, 2021), whereas others cite instances in which state-to-state dispute resolution or market-based incentives have yielded better outcomes (Cezar, 2022; Marx et al., 2017).

However, within these debates, analyses that focus on sector-specific sustainability provisions remain limited. Forestry-related sustainability provisions deserve attention given the important role forests play in mitigating climate change and supporting local livelihoods.

1.1 Context and Background

Sustainability provisions vary significantly in their design, legal enforceability, and compliance mechanisms. Some are binding, creating legal obligations backed by dispute settlement mechanisms or trade sanctions that hold States accountable and provide recourse for non-compliance (Kim et al., 2023). In contrast, non-binding provisions rely on voluntary cooperation, capacity-building programs, and best-practice exchanges, with their effectiveness largely dependent on political will, institutional capacity, and external incentives (Jinnah & Morgera, 2013).

The mechanisms for ensuring compliance further differentiate these provisions. Some trade agreements adopt a cooperative approach, emphasizing stakeholder engagement, technical assistance, and knowledge-sharing initiatives (as seen in the European Union's use of expert panels and civil society dialogues) (Velut et al., 2022). Others follow a sanction-based model, linking sustainability provisions directly to market access or trade preferences. For instance, the United States-Mexico-Canada Agreement (USMCA) includes enforceable labor provisions that allow for trade-based penalties in cases of non-compliance (Laurens et al., 2022).

Despite their growing inclusion in trade agreements, research on sustainability provisions remains fragmented. Early studies focused on their design and prevalence (Ederington, 2002; Limão, 2007), while more recent work has shifted toward impact measurement (Ajayi, 2017;

Berger et al., 2020; Brandi et al., 2020). Some scholars view these provisions as soft law instruments that lack sufficient enforcement capacity (Bastiaens & Postnikov, 2017); others argue that even without strict enforcement, they facilitate norm diffusion and gradually embed sustainability principles within national governance structures (Jinnah & Lindsay, 2016). Empirical evidence is mixed. Binding environmental provisions have sometimes led to measurable improvements especially when paired with sanctions or trade penalties (Bastiaens & Postnikov, 2017; Peinhardt et al., 2019), whereas non-binding, cooperative approaches, such as technical assistance programs, may be equally effective over the long term (Brandi et al., 2020; Yoo & Kim, 2016). Similarly, studies on labor provisions indicate that clear enforcement measures (e.g., trade-based penalties under the USMCA) tend to yield better labor rights outcomes than non-binding commitments (Abd Razak & Hassan, 2019), though dialogue-based approaches (as practiced by the European Union) can also lead to gradual improvements, contingent on domestic contexts ((Postnikov & Bastiaens, 2014; Velut et al., 2022). These competing perspectives highlight the need for further research into the design, implementation, and impact of sustainability provisions across different regulatory and economic contexts. Moreover, most existing research has examined sustainability provisions broadly without systematically assessing their sector-specific applications, a gap that this thesis addresses through a detailed examination of forestry-related sustainability provisions and their results.

Forests play a central role in climate regulation, biodiversity conservation, and economic livelihoods (Avesani et al., 2024; Pacheco, 2020). They serve as vital carbon sinks, absorbing significant portions of global CO_2 emissions and provide habitat for approximately 80% of terrestrial species (Abman & Lundberg, 2020). Forests support the livelihoods of more than 1.6 billion people, including Indigenous communities, smallholder farmers, and commercial enterprises engaged in timber and non-timber trade (UN DESA, 2020). Given this importance, forests are integral to sustainable development initiatives. Yet they face persistent challenges such as deforestation, illegal logging, and weak governance. With global timber and forest product trade valued at hundreds of billions of dollars annually, there are strong incentives for both sustainable management and unsustainable practices (Baumgartner, 2019a; Pacheco, 2020). Between 1990 and 2020, deforestation resulted in the loss of 420 million hectares of forest, most severely impacting tropical regions (Avesani et al., 2024).

Trade liberalization has complex implications for forest governance. On one hand, increased trade can stimulate economic growth and expand legal timber markets; on the other, it intensifies pressures on forested areas, particularly in regions with weak regulatory frameworks (Pacheco, 2020). Research indicates that regional trade agreements may inadvertently

contribute to deforestation, not only through direct timber harvesting but also via agricultural expansion (Abman & Lundberg, 2020). Commodities such as soy, palm oil, and beef, which drive deforestation in the Amazon, Southeast Asia, and Central Africa, exemplify these indirect impacts (J. Busch & Ferretti-Gallon, 2017). Conversely, trade can also incentivize improved forest management practices, especially when foreign direct investment (FDI) and integration into global markets are coupled with robust governance institutions (Begemann et al., 2021; Jiang et al., 2022). Timber legality requirements such as those enforced under the European Union Timber Regulation (EUTR) and the U.S. Lacey Act have been associated with reductions in illegal logging and improvements in supply chain transparency (Brack, 2014), though their success depends on domestic enforcement capacity and economic incentives (Ongolo & Karsenty, 2015). While sustainability provisions in trade agreements are designed to regulate forestry practices, their impact remains variable, warranting further scrutiny.

Trade agreements incorporate forestry-related sustainability provisions to regulate timber trade, promote sustainable forest management, and strengthen governance structures. A primary objective is to curb illegal logging, which is estimated to account for about 30% of global timber trade and up to 50–90% in some tropical regions (Pacheco, 2020). Illegal logging depletes forest resources, contributes to carbon emissions, and undermines governance, prompting the inclusion of legality verification mechanisms. Beyond verifying legality, trade agreements promote sustainable forest management by referencing best-practice frameworks, certification schemes, and technical cooperation. Voluntary certification programs, like those administered by the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC), are increasingly incorporated into these agreements to encourage sustainable forestry practices. Some agreements go further by linking market access to compliance with sustainability standards, creating economic incentives for aligning national forestry policies with international environmental commitments (Avesani et al., 2024; Peinhardt et al., 2019). Moreover, governance provisions within these agreements often require enhanced transparency, independent oversight, and the engagement of local stakeholders. Monitoring and reporting obligations, supported by third-party audits or collaborative review processes, are integral to ensuring their effective implementation

Variations in approaches, from enforcement-based mechanisms with trade sanctions to cooperative, capacity-building models raise important questions about which strategies are most effective in improving forestry governance and reducing deforestation (Pacheco, 2020). While strict enforcement can enhance compliance through legal accountability (Peinhardt et al., 2019), it may also impose trade barriers on developing countries with limited institutional capacity. In

contrast, cooperative approaches offer flexibility and long-term benefits (Yoo & Kim, 2016) but may lack the teeth and institutional arrangements needed to deter unsustainable practices (Avesani et al., 2024).

1.2 Research Problem

Despite the increasing inclusion of sustainability provisions in trade agreements, their sector-specific applications remain understudied. Most research has examined these provisions at a broad level, focusing on their legal structure, frequency of inclusion, or overarching role in trade and environmental governance rather than assessing how they function in specific industries (Morin et al., 2018; Velut et al., 2022). Within this broader landscape, forestry-related sustainability provisions have not been consistently examined independently. The relative absence of sector-specific analysis makes it difficult to determine whether these provisions contribute to sustainable forest management or primarily serve as symbolic commitments.

A key limitation in the literature is the lack of a structured classification framework that differentiates forestry-related sustainability provisions from broader environmental commitments. Existing databases, like the Trade and Environment Database (TREND) and the FAO Ag-ERPs database, provide only high-level categorizations, either grouping forestry provisions under general environmental clauses or categorizing them into a limited set of forestry-related topics (Avesani et al., 2024; Morin, Dür, et al., 2018). This lack of granularity restricts the ability to systematically compare forestry provisions across agreements and assess how differences in design and implementation influence sustainability outcomes. Without a structured framework, existing research has struggled to evaluate whether these provisions are effectively designed to achieve sustainability goals.

In addition to classification challenges, limited research has examined the role of cooperative activities in implementing forestry-related sustainability provisions. While much of the existing literature has focused on legally binding provisions and their enforcement structures, cooperative activities have received comparatively little attention (Pacheco, 2020). These activities play an important role in operationalizing sustainable development commitments, yet their contribution to governance improvements and environmental outcomes remains underexplored (Peinhardt et al., 2019). While many trade agreements include forestry provisions that encourage cooperative activities, there is little systematic research assessing whether these activities lead to measurable results (Avesani et al., 2024). This thesis addresses this gap by conducting a comparative analysis of forestry-related cooperative activities across trade agreements, evaluating their design, implementation, and impact.

The effectiveness of sustainability provisions in trade agreements is highly debated. While some studies highlight cases where they have had measurable effects (Berger et al., 2020; Brandi et al., 2020), others suggest that sustainability provisions remain largely symbolic when enforcement capacity is weak (Bronckers & Gruni, 2019; Overdevest & Zeitlin, 2018). An important gap in the literature is the absence of systematic, results-oriented research on whether these provisions generate tangible sustainability results in the forestry sector. This thesis applies a results-based conceptual model to assess forestry-related cooperative activities, moving beyond the text of the agreements to evaluate their outputs, outcomes, and long-term impacts.

To systematically examine the role of forestry-related sustainability provisions in trade agreements, this study draws upon two complementary theoretical frameworks: issue linkage theory and norm diffusion theory.

1.3 Theoretical Framework

This study is positioned at the intersection of issue linkage theory and norm diffusion theory, which together provide a structured approach for analyzing the design and effectiveness of sustainability provisions in trade agreements. These theoretical perspectives offer insights into the mechanisms through which sustainability provisions influence trade and environmental governance, particularly in the forestry sector. While issue linkage theory explains the incentives for states to integrate sustainability commitments into trade agreements, norm diffusion theory sheds light on how these provisions contribute to the broader dissemination and adoption of sustainability norms across jurisdictions.

Issue linkage theory offers an explanation for how states integrate multiple issue areas into negotiations to enhance cooperation and increase the likelihood of achieving mutually beneficial outcomes (Conconi, 2018; Jinnah & Lindsay, 2016; Sebenius, 1983). This theory is grounded in the assumption that states operate with limited resources and competing priorities, making them more likely to engage in sustainability-related commitments within trade agreements when such commitments offer economic or strategic advantages (Haas, 1980; Koremenos et al., 2001). The principle of reciprocity, a key feature of issue linkage, suggests that states are more likely to cooperate when their actions generate tangible benefits for all parties involved (Tomz, 2012). Within trade agreements, this is reflected in the way sustainability provisions are often linked to trade benefits, such as preferential market access or investment incentives, which create stronger compliance incentives and increase the likelihood that states will uphold their environmental obligations (Jinnah & Lindsay, 2016).

Scholars distinguish between different types of issue linkage, each with implications for how sustainability provisions function in trade agreements. Enforcement linkage refers to mechanisms where compliance with sustainability provisions is directly tied to trade-related penalties or incentives, a strategy that has been shown to strengthen environmental and labor standards enforcement (Maggi, 2016). Agreements that incorporate enforcement linkage often impose trade restrictions or sanctions for violations of sustainability commitments, making them legally binding and enhancing their credibility (Conconi, 2018). Negotiation linkage, in contrast, occurs when multiple issue areas are negotiated simultaneously, ensuring that environmental considerations are integrated into trade policy from the outset rather than being treated as secondary concerns (Poast, 2013). Lastly, participation linkage involves the use of incentives or diplomatic pressure to encourage states to join sustainability-focused agreements by linking participation to broader trade negotiations (Maggi, 2016). Across these different forms, issue linkage theory highlights the strategic use of trade agreements as mechanisms for achieving sustainability objectives by integrating environmental and social concerns into broader economic frameworks.

While issue linkage theory explains the structural incentives that drive states to adopt sustainability provisions, norm diffusion theory provides an account of how these provisions contribute to shaping governance practices and policies over time (Jinnah & Lindsay, 2016). Norm diffusion refers to the process by which shared standards of behavior become embedded within institutional and policy frameworks, influencing how states and other actors engage with sustainability commitments. In the context of trade agreements, sustainability norms are often introduced through formal treaty provisions, signaling a commitment to responsible environmental governance. However, beyond these formal commitments, trade agreements also facilitate norm diffusion through institutional mechanisms such as compliance monitoring bodies, stakeholder engagement forums, and dispute resolution panels (Jinnah & Lindsay, 2015; Laurens et al., 2022). These mechanisms create platforms for ongoing dialogue, information exchange, and best practice sharing, enabling sustainability principles to gain traction and influence domestic policy frameworks.

A key feature of norm diffusion is the role of non-state actors (Bettiza & Dionigi, 2015; Finnemore & Sikkink, 1998), including civil society organizations, industry groups, and international institutions, in advocating for and reinforcing sustainability commitments. These actors often engage in monitoring and reporting on compliance with sustainability provisions, exerting pressure on governments to uphold their commitments and contributing to the broader entrenchment of sustainability norms within trade governance (Jinnah & Lindsay, 2016).

Additionally, norm diffusion occurs through processes of domestic policy adaptation, where states align their national regulations and practices with the sustainability commitments outlined in trade agreements (P.-O. Busch et al., 2005). This adaptation may take the form of new legislation, regulatory reforms, or institutional capacity-building initiatives aimed at meeting international sustainability standards (Jinnah & Lindsay, 2016).

By integrating issue linkage theory and norm diffusion theory, this study provides a comprehensive framework for assessing the role of sustainability provisions in trade agreements. Issue linkage theory explains the incentives and strategic considerations that drive states to include sustainability provisions in trade agreements, while norm diffusion theory accounts for the mechanisms through which these provisions influence governance practices and contribute to broader shifts in sustainability norms. Together, these theoretical perspectives inform the study's approach to analyzing the effectiveness of forestry-related sustainability provisions in trade agreements. They also underpin the development of the Forestry Provisions Depth and Coverage Index (FPDCI), a framework that systematically evaluates the scope, specificity, and intergovernmental mechanisms associated with these provisions.

1.4 Research Questions

To address these gaps, this study investigates the design and effectiveness of forestry-related sustainability provisions in trade agreements. It is guided by three core research questions:

1. What is the current state of academic knowledge on sustainability provisions in trade agreements?
2. What sustainability provisions are directed at the forestry industry, and how does their depth and coverage vary across trade agreements?
3. Do forestry-related cooperative activities in trade agreements generate measurable results?

The overarching objective of this study is to provide a structured, sector-specific analysis of sustainability provisions in trade agreements, with a particular focus on forestry. To achieve this, the study first evaluates the existing knowledge landscape on sustainability provisions in trade agreements, identifying dominant research trends, gaps, and the extent to which sector-specific analyses are lacking. It then develops a detailed classification framework for forestry-related sustainability provisions, allowing for a systematic comparison of their design and coverage across agreements. In addition, the study examines how cooperative activities within trade agreements contribute to the implementation of forestry provisions, assessing their role in

governance processes and their potential to generate sustainability results. This research provides empirical insights into forestry-related sustainability provisions within trade agreements, highlighting implications for policymakers, trade negotiators, and sustainability practitioners seeking to strengthen sustainability commitments in international trade policy.

By addressing these objectives, this thesis advances the literature on trade and sustainable development, offering a sector-specific and results-oriented perspective on how sustainability provisions operate in practice.

1.5 Contributions and Thesis Organization

This thesis examines forestry-related sustainability provisions in trade agreements, providing a structured, sector-specific analysis of their design, implementation, and operationalization through cooperative activities. It makes three key contributions to the study of sustainability provisions in trade agreements. First, it develops a classification framework that disaggregates forestry-related sustainability provisions, allowing for a systematic assessment of their depth and coverage across trade agreements. Second, it applies a results-based conceptual model to evaluate the results of forestry-related cooperative activities, addressing a gap in existing research that has primarily focused on legally binding provisions. Third, it contributes to the literature on norm diffusion and issue linkage by providing insights into how sustainability provisions not only promote the internalization of environmental norms through cooperative activities but also align economic incentives with sustainability objectives, thereby fostering compliance even in the absence of strict enforcement mechanisms.

The rest of the thesis is structured so that each chapter builds on the previous chapter to systematically analyze forestry-related sustainability provisions in trade agreements.

Chapter 2 examines the evolution of research on sustainability provisions in trade agreements. Employing bibliometric analysis, it maps the research landscape by identifying dominant themes and significant gaps in the literature. The findings reveal a fragmented body of work on sustainability provisions and a notable lack of sector-specific analyses, particularly concerning forestry-related issues. This overview lays the groundwork for a more structured analysis of forestry-related provisions in subsequent chapters.

Chapter 3 examines sustainability provisions targeted at the forestry industry by building on the analysis from Chapter 2. It introduces a classification framework that systematically categorizes forestry-related sustainability provisions in trade agreements based on their depth and

coverage. This structured approach enables a comparative analysis across agreements and provides a methodological tool to assess the variation and potential role of these provisions in supporting sustainable forestry management.

Chapter 4 examines forestry-related cooperative activities in trade agreements through a comparative analysis that extends beyond classification. Applying a results-based conceptual model, the chapter evaluates the extent to which these cooperative activities yield tangible outcomes. It identifies patterns across different agreements and institutional contexts, offering insights into how cooperative mechanisms facilitate the practical implementation of forestry-related sustainability provisions.

Chapter 5 concludes the thesis by synthesizing its key findings and outlining contributions to theory, methodology, and policy. It reflects on the implications of forestry-related sustainability provisions in trade agreements, evaluating their potential to support sustainable forestry governance while acknowledging the challenges inherent in their design and implementation. The chapter also discusses the study's limitations and suggests directions for future research, emphasizing the need for further empirical analysis of sustainability provisions in trade agreements.

Together, these chapters provide a structured, step-by-step investigation into forestry-related sustainability provisions, moving from an assessment of existing knowledge to an empirical evaluation of their implementation and sustainability results. By offering a sector-specific and results-oriented perspective, this thesis advances scholarly and policy discussions on how trade agreements contribute to sustainable forestry governance.

Chapter 2
Analyzing the academic knowledge landscape of sustainability provisions in trade agreements.

2.1 Introduction

In this chapter, I quantitatively examine the literature on sustainability provisions in trade agreements by addressing the question, “What is the current state of academic knowledge on sustainability provisions in trade agreements?”. This examination is important because sustainability provisions play a crucial role in ensuring that international trade promotes sustainable development (Cordonier Segger, 2021). Understanding how these provisions have been studied is fundamental to assessing how trade agreements affect and contribute to the universal goal of sustainable development. Additionally, this examination lays the foundation for this thesis and places the research in its proper context.

In this thesis, I refer to "sustainability provisions" as environmental and social clauses found in the text of trade agreements. These provisions address various topics including environmental protection, labor rights, gender equality, and trade in environmental goods and services. The literature employs various terms for these provisions, sometimes addressing them separately as "environmental provisions" (Jinnah & Morgera, 2013) and "labor provisions" (Marx et al., 2017), and other times collectively under broader terms like "trade and sustainable development provisions" (Velut et al., 2022) or "environmental and social provisions" (Berger et al., 2020). By using "sustainability provisions," I adopt an integrated approach that acknowledges the interconnected nature of environmental and social issues within sustainable development. Including labor provisions under this umbrella is important because labor rights are a key component of the social pillar of sustainability, contributing to fair working conditions, social justice, and inclusive economic growth.

The focus area of this chapter is a subset within the field of international trade and sustainable development, referred to as "the sub-field" throughout the chapter. By concentrating on this sub-field, I aim to provide a detailed and nuanced understanding of the specific trends and patterns in the research on sustainability provisions in trade agreements.

A handful of studies have employed bibliometric analysis in their reviews of literature on international trade, revealing knowledge networks and identifying influential research and citation processes. In the specific field of international trade and sustainable development, only a couple of studies have conducted bibliometric analyses.

Jiménez-Almazán et al. (2020) used the Web of Science as their source database for journal articles published on international trade and sustainability. Their bibliometric and cluster analysis revealed that despite the interconnectedness of international trade and sustainability, the research is fragmented across various areas such as agriculture, industry, and carbon footprint. They emphasize that while there is significant overlap, the two fields exhibit contrasting characteristics.

Similarly, Padhan and Bhat (2023) drew their data from the Scopus database, focusing on journal articles discussing international trade and the environment. Their analysis highlights the increasing scholarly interest in this intersection and points to key future research directions, including climate change, carbon leakage, environmental protection, and green supply chain management. By utilizing performance and science mapping analysis, Padhan and Bhat (2023) provide a comprehensive overview of the current research trends and thematic focuses in the intersection of trade and the environment. However, both of these studies relied on a single source database, unlike this current thesis, which relies on both Web of Science and Scopus as its source databases. This reliance on a single database might have limited the comprehensiveness of the analyses, as different databases may have varying coverage of relevant literature. Moreover, this thesis focuses on articles published specifically on the topic of sustainability provisions in trade agreements.

Bibliometric methods have also been applied in other areas of international trade research. For instance, Avşar and Serin (2021) explored trade and cryptocurrency, Bıçakcıoğlu Peynirci et al. (2023) examined services marketing, Lal and Rai (2022) investigated exchange rate volatility, and Bretas and Alon (2021) focused on franchising. These bibliometric studies collectively contribute to a deeper understanding of the field of international trade and offer valuable insights into the evolution and future directions of research in this field.

This chapter is organized as follows. Section 2.2 describes the methodology, including the bibliometric analysis approach and the PRISMA method for systematic data collection and filtering. Section 2.3 details the dual-database approach, the formulation of search queries, and the criteria used to refine the dataset. Section 2.4 presents the results and discussion, identifying prominent themes, influential authors, and key trends in the literature on sustainability provisions in trade agreements. Section 2.5 concludes the chapter by summarizing the findings, outlining their implications, and highlighting gaps for future research.

2.2 Method

This phase of the research employs the bibliometric analysis method, a quantitative approach that uses mathematical and statistical techniques to study literature in a specific field (Donthu et al., 2021). By providing an objective framework that mitigates researcher bias, bibliometric analysis enhances the rigor of literature reviews (Zupic & Čater, 2015). This method is useful for mapping the development of a field, identifying emerging areas, and providing strategic insights for future research endeavors, revealing gaps and under-researched areas (Ellegaard, 2018).

This study adopts the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) method to guide its bibliometric analysis. The PRISMA method involves a structured approach to identifying, screening, and including relevant studies, ensuring a comprehensive and transparent selection process (Moher et al., 2009). By using PRISMA, this study ensures that all relevant literature is systematically evaluated, enhancing the rigor and reproducibility of the bibliometric analysis (Page et al., 2021).

In this study, bibliometric analysis plays an important role in evaluating sustainability provisions in trade agreements, offering a comprehensive assessment of the field and guiding future research directions. The dynamic interplay between trade policies and sustainable development necessitates a methodology capable of analyzing extensive scholarly works to identify patterns and focal points in research. Quantifying the prevalence and impact of studies on sustainability provisions within trade agreements reveals key themes and topics that have been explored, as well as the most prolific scholars, institutions, and geographic areas of activity.

Ultimately, applying bibliometric analysis in this study ensures a data-driven understanding of the current landscape, allowing for a strategic and informed approach to promoting sustainability in international trade.

Limitations

This study employs a dual-database approach, using Web of Science and Scopus, to provide a comprehensive bibliometric analysis of sustainability provisions in trade agreements. While this method ensures broad coverage of high-impact research and aligns with established practices in bibliometric studies (Mongeon & Paul-Hus, 2016), it is not without limitations.

First, while Web of Science and Scopus offer robust access to high-impact research, their scope is not exhaustive. Relevant studies from smaller or region-specific journals not indexed in these databases may have been excluded. As noted by Vieira & Gomes (2009), such exclusions may lead to an incomplete representation of research, particularly in regional contexts.

Second, the analysis focuses exclusively on English-language articles, a common practice in bibliometric research to ensure consistency in linguistic interpretation (Vera-Baceta et al., 2019). While this approach is methodologically sound, it likely introduces a language bias that limits the diversity of perspectives captured. Research published in other languages, particularly those from non-Western regions, may offer valuable contributions to the discourse on sustainability provisions but remain outside the scope of this analysis.

Third, the decision to limit the dataset to journal articles ensures a consistent and comparable analysis and fully leverages standardized bibliometric indicators. Journal articles are often the primary medium for disseminating rigorous academic research (Archambault et al., 2009). However, this choice excludes non-journal publications, such as policy reports, books, and white papers, which may contain rich qualitative insights and practitioner-focused analyses.

Despite these limitations, this study contributes to the sub-field by outlining broad trends, identifying key contributors, and mapping the evolution of research sustainability provisions in trade agreements. Future research could address these limitations by incorporating non-English articles, including excluded publication types, and expanding the dataset to cover underrepresented journals and regions.

The following section describes the data collection process, detailing the databases used, the search queries formulated, and the filtering criteria applied to generate the dataset.

2.3 Data

Data for this study was obtained from two databases chosen due to their combined comprehensive literature coverage: Web of Science and Scopus. The analysis began by constructing search queries across three primary areas of focus: environmental provisions/standards in trade agreements, labor provisions/standards in trade agreements, and sustainability provisions in trade agreements. The search targeted titles, abstracts, and keywords. Only articles were included in the study, as other publication types such as books, white papers, conference proceedings and policy briefs typically lack direct and comparable bibliometric impact indicators (Padhan and Bhat, 2023).

The initial search yielded 1,340 articles across both databases. After applying filters for publication date (1993-2023), document type (articles only), and language (English), the total was reduced to 870 articles: 224 from Web of Science and 646 from Scopus. A manual abstract screening followed to remove articles that did not explicitly focus on the target topics (environmental/labor/sustainability or sustainable development provisions/clauses in trade

agreements). This screening narrowed the dataset to 364 articles: 143 from Web of Science and 221 from Scopus.

These articles were then uploaded to the R software, where duplicates were identified and removed based on DOI, title, and publication year. The final dataset comprised 221 unique and relevant articles.

The analytical phase was conducted using the R software, leveraging the robust capabilities of the Bibliometrix package (Aria & Cuccurullo, 2017), which is known for its comprehensive bibliometric analysis tools.

Table 1Data extraction

	Environmental Provisions		**Labour Provisions**		**Sustainability Provisions**		**Total**	
Query	Title + abstract + keywords *("trade agreement*")* AND *("environmental provisions"* OR *"environmental standards")*		Title + abstract + keywords *("trade agreement*")* AND *("labo* provisions"* OR *"labo* standards")*		Title + abstract + keywords *("trade agreement*")* AND *("trade and sustainable development"* OR *"sustainability provisions"* OR *"sustainability standards")*			
	WoS	Scopus	WoS	Scopus	WoS	Scopus	WoS	Scopus
Initial query	85	326	126	499	41	263	252	1088
Filtered by date, document type and language	76	204	109	290	39	152	224	646
Exclude irrelevant articles	38	72	71	114	34	35	143	221
Merge and remove duplicates							221	

This table details the process of filtering and merging data from two major databases (Scopus and Web of Science) to produce the final dataset.

Table 2 Main Information about Data

Description	**Results**
Timespan	1993:2023
Sources (Journals)	132
Documents	221
Annual Growth Rate %	9.44

Document Average Age	7.09
Average citations per doc	11.78
Keywords Plus (ID)	340
Author's Keywords (DE)	512
Authors	321
Authors of single-authored docs	95
Single-authored docs	109
Co-Authors per Doc	1.9
International co-authorships %	18.1
Article	221

This table summarizes important characteristics of the dataset, such as annual growth rate, average citations per document, and author information.

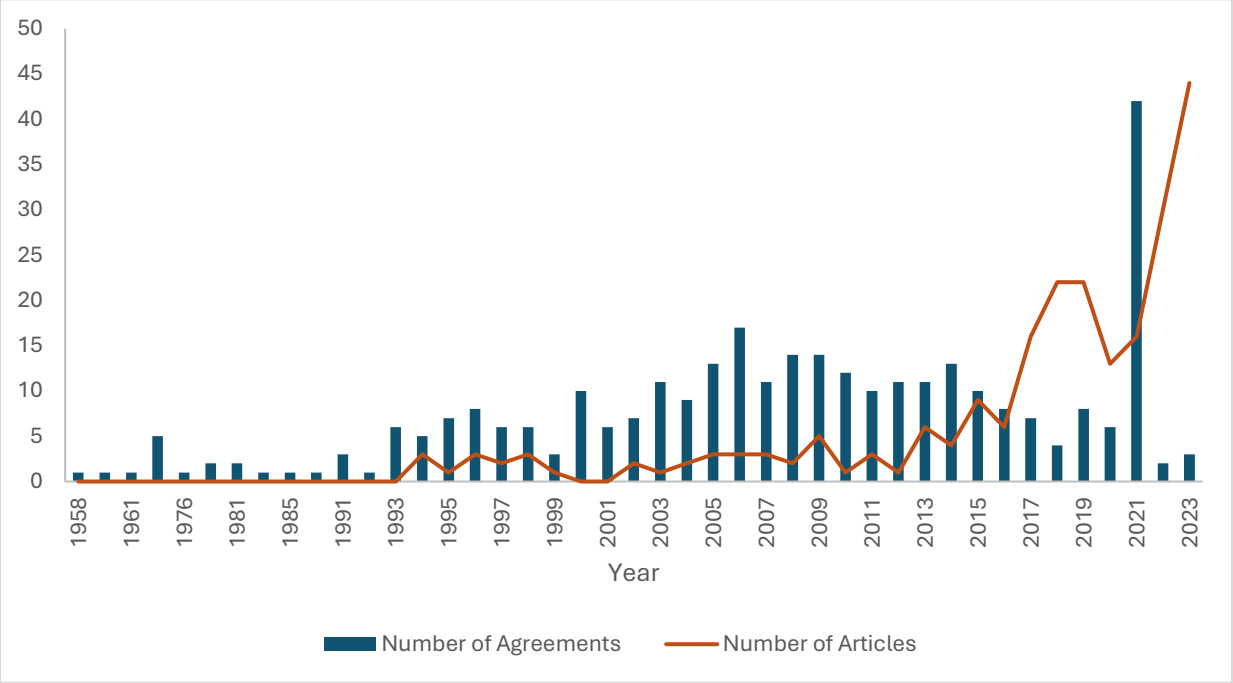
The following results and discussion section presents the findings of the bibliometric analysis, the key themes and patterns observed in the sub-field of sustainability provisions in trade agreements.

2.4 Results and Discussion

The scholarly focus on sustainability provisions within trade agreements has shown a notable increase over the years. This growing academic interest is quantitatively reflected in the annual production of literature, which has expanded at an average annual rate of ten percent. Eighty percent of the articles in the dataset were written in the last ten years, with a particularly significant surge observed in 2016. This is indicative of a heightened intellectual response to emerging global sustainable development challenges and policy shifts during that period.

Over three decades (1993-2023), the academic discourse on sustainability provisions in trade agreements has seen an evolution in focus, scope, and methodological approaches. The identification of these shifts emerged from a manual review of the abstracts of the dataset, coupled with an in-depth analysis of selected anchor papers. Through this process, distinct thematic and methodological trends were observed, which naturally clustered into three periods of inquiry. The first period spans from 1993 to 2007 (Period A), characterized by foundational discussions on integrating labor and environmental standards into trade agreements. The second period, from 2008 to 2015 (Period B), witnessed an expansion of the sustainability agenda, including climate change and broader human rights issues. Finally, the last period, from 2016 to 2023 (Period C), reflects a more integrated and outcome-focused approach.

Figure 1 Trade Agreements per Year and Articles Published on Sustainability Provisions per Year



This figure compares the number of trade agreements entered into force per year with the number of articles published on sustainability provisions in trade agreements. The increase in trade agreements provided substantial material for academic exploration and contributed to a surge in articles from 2013 onwards. 34 of the 41 agreements that entered into force in 2021 were signed between the United Kingdom and its new trade partners following its exit from the European Union.

2.4.1 Period A (1993 -2007)

The period from 1993 to 2007 was characterized by early attempts to integrate labor and environmental provisions into the framework of trade agreements. During this time, global trade expanded rapidly, creating a need for comprehensive approaches to address the social and environmental impacts associated with trade liberalization. This period marked a foundational phase in exploring how trade agreements could promote sustainable development, despite the inherent tensions between economic growth and sustainable development.

One of the major developments of this period was the ratification of the North American Free Trade Agreement (NAFTA) in January 1994, the first trade agreement to incorporate side agreements on labor and the environment. These side agreements were included as a response to critiques from non-governmental organizations (NGOs), labor groups, and environmental activists as tools to mitigate the negative effects of trade liberalization on vulnerable sectors and to promote a more balanced approach to economic growth (Ferber et al., 1995; Pomeroy, 1995). However, the effectiveness of these provisions was subject to debate. While these side agreements set a precedent for future trade negotiations, they were often criticized for their lack of strong enforcement mechanisms. Schaeffer (2007) highlighted the

inadequacies in enforcement, pointing to weak legal frameworks, insufficient monitoring systems, and limited international cooperation, which restricted the impact of these provisions on labor rights and environmental outcomes.

Research during this period sought to conceptualize the motivations for including sustainability provisions in trade agreements. Theoretical frameworks such as issue linkage theory and institutional theory provided valuable insights into the integration of labor and environmental standards into trade policies (Granger & Siroën, 2006; Montes & Magno, 1997). These theoretical explorations highlighted the dual focus on labor rights and environmental protection as integral components of sustainability, laying the groundwork for understanding how trade agreements could align economic integration with sustainable development objectives.

Case studies were a popular methodological approach during this period, and NAFTA was a focal point for analysis, with researchers examining its environmental and labor side agreements. Schuler (1996) illustrated the complexities of aligning economic objectives with environmental safeguards under NAFTA, while Kabeer (2004) emphasized the gender and social equity dimensions of labor standards. Kabeer's work highlighted the challenges faced by marginalized groups, including women workers in developing countries, and the difficulty of translating these considerations into enforceable provisions within trade agreements.

A recurring theme in the literature was the challenge of enforcement. Despite the inclusion of labor and environmental standards in trade agreements, their enforceability remained a significant concern. The lack of binding enforcement mechanisms often reduced these provisions to symbolic gestures, as critics argued that inadequate legal and institutional frameworks undermined their potential impact (Hensman, 1996; Montes & Magno, 1997).

Beyond enforcement challenges, scholars raised concerns about whether integrating non-trade objectives into trade agreements could hinder broader economic goals. Brown, Deardorff, and Stern (1998) questioned whether integrating non-trade objectives into trade agreements might hinder multilateral liberalization efforts, a concern that reflected broader skepticism about the compatibility of sustainability goals with traditional free trade priorities.

Related to these broader concerns, the inclusion of sustainability provisions also raised concerns about their potential use as protectionist measures. Developing countries, in particular, feared that labor and environmental provisions could serve as disguised trade barriers, allowing developed nations to restrict imports under the guise of sustainability. This fear contributed to the reluctance of many Global South countries to support the integration of

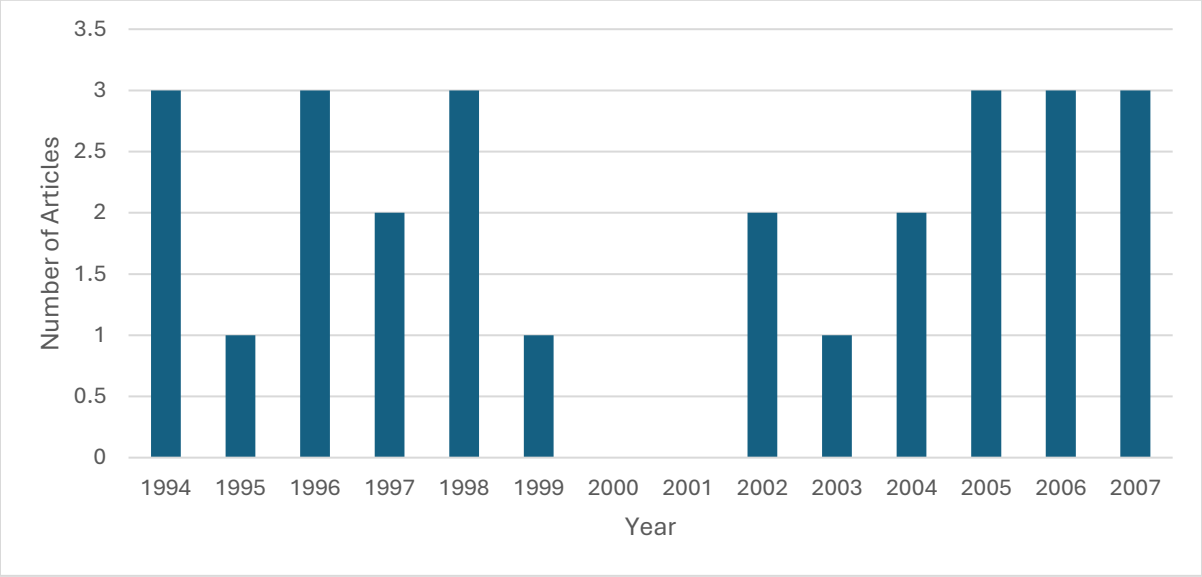
non-trade objectives into multilateral agreements, further complicating efforts to achieve consensus.

Overall, the period from 1993 to 2007 was one of exploration and foundational research. Scholars grappled with theoretical debates, practical implementation challenges, and the broader implications of sustainability provisions for global trade dynamics. These efforts highlighted the need for a balanced approach that could integrate sustainable development goals without undermining economic prosperity. While progress was made in conceptualizing the intersection of trade and sustainable development, the recurring challenges of enforcement and political resistance highlighted the limitations of these early attempts and set the stage for further inquiry in subsequent periods.

Publication Trends

A total of 27 journal articles were published in this period. The number of articles published annually during this time remained relatively stable, with small fluctuations and no significant growth. This shows that research during this period was exploratory, as scholars began to investigate the intersection of international trade and sustainable development. A slight increase in publication volume between 2004 and 2007 may have indicated growing attention to these topics, but overall, the research remained in its early stages of development.

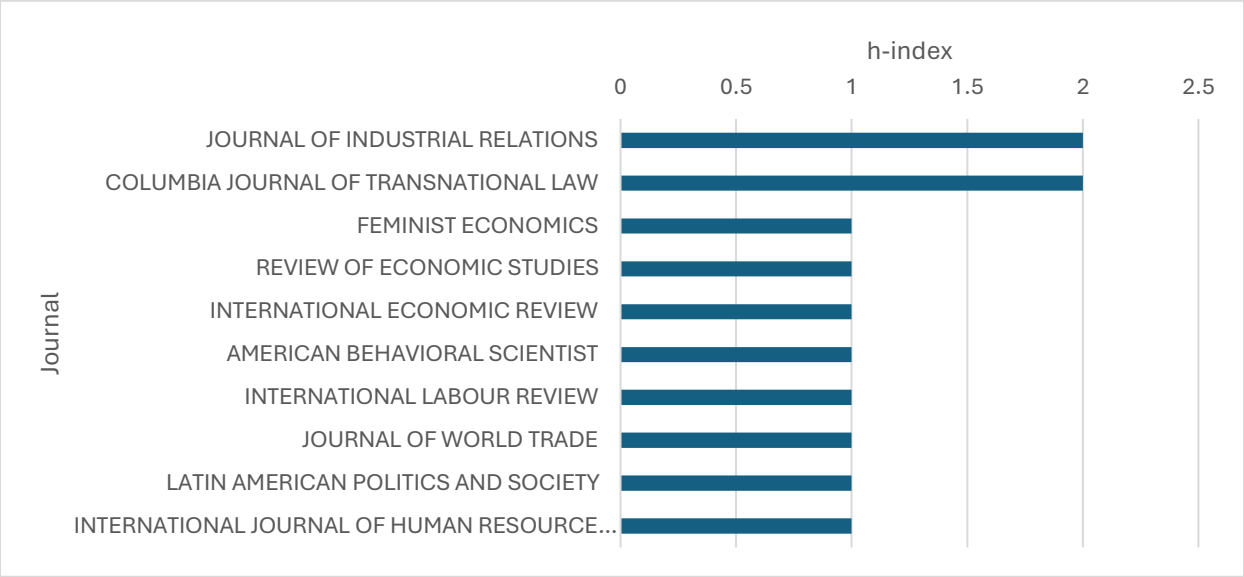
Figure 2 Period A: Annual Scientific Production



This figure displays the annual scientific production of articles during Period A (1993–2007). The number of articles published remained relatively stable, with minor fluctuations.

Research on labor and environmental provisions in trade agreements during Period A was published across a variety of academic journals. The *Journal of Industrial Relations* and the *Columbia Journal of Transnational Law* had the highest h-index values among the journals from this period. Other journals, including *Feminist Economics, Review of Economic Studies,* and *International Labour Review* also published research in this area.

Figure 3 Period A: Most influential journals



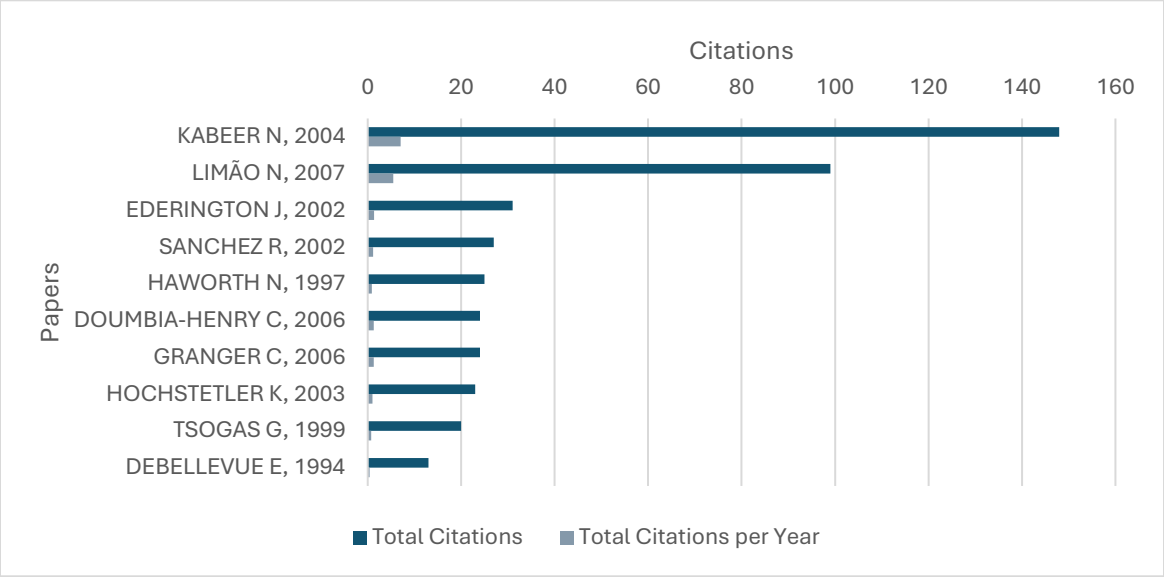
This figure shows the most influential journals during Period A (1993–2007) based on h-index values. The Journal of Industrial Relations and the Columbia Journal of Transnational Law had the highest h-index values among the journals publishing research on labor and environmental provisions in trade agreements.

Influential Authors and Articles

The first article published in the dataset was published in this period. *The North American Free Trade Agreement: An Ecological-Economic Synthesis for the United States and Mexico* by DeBellevue et al. (1994), appeared in *Ecological Economics.* This paper explored the environmental challenges posed by NAFTA and proposed the North American Environmental Protection Treaty (NAEPT) as a complementary agreement to address these issues. Unlike the North American Agreement on Environmental Cooperation (NAAEC) and its Commission on Environmental Cooperation (CEC), which focused on cooperation and monitoring, the proposed NAEPT outlined more ambitious measures, including countervailing duties and retributive environmental impact taxes, to integrate sustainability into trade frameworks and mitigate the environmental costs of liberalization.

Only a few articles in this period were highly cited. Kabeer's 2004 article titled *Globalization, Labor Standards, and Women's Rights: Dilemmas of Collective (In) Action in an Interdependent World,* published in *Feminist Economics,* was the most cited article during this period, with 148 citations. It highlighted the challenges of linking labor standards to trade agreements while advocating for approaches that accounted for local contexts and empowered female workers to assert their rights.

Figure 4 Period A: Citations per year



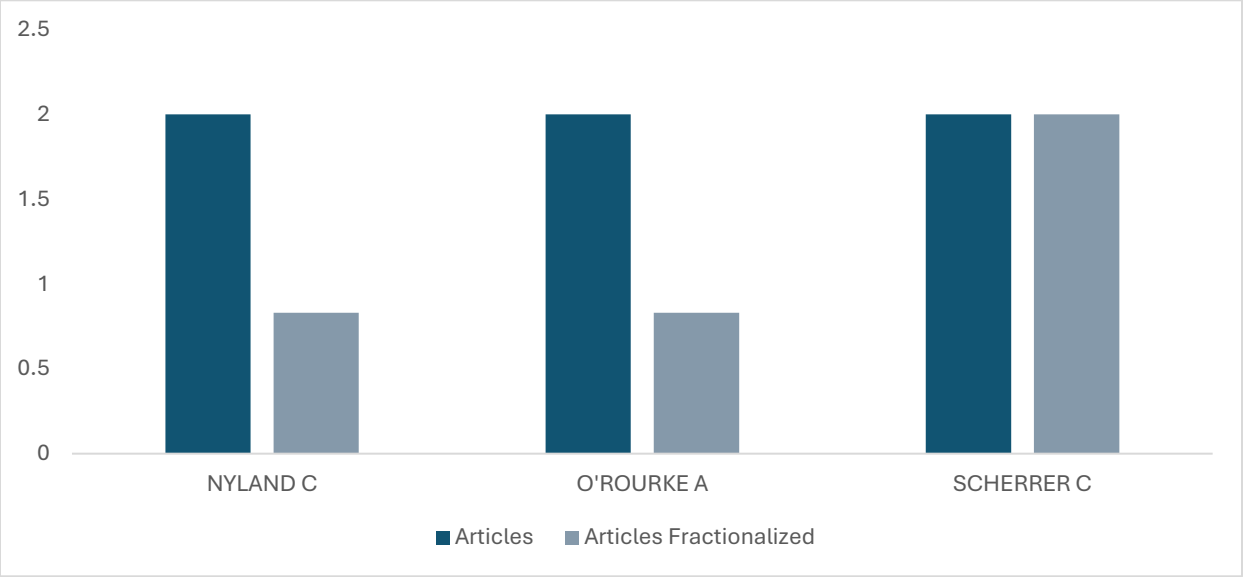
This figure displays the citations per year for influential articles published during Period A (1993–2007). The article by Kabeer (2004) received the highest total citations, followed by Limão (2007) and Ederington (2002)

Limão's 2007 paper titled *Are Preferential Trade Agreements with Non-trade Objectives a Stumbling Block for Multilateral Liberalization?* published in *The Review of Economic Studies,* was the second most cited paper during this period, with 99 citations. The paper examined how preferential trade agreements (PTAs) that include non-trade provisions, such as labor and environmental standards, can raise the cost of multilateral tariff reductions and act as barriers to further multilateral trade liberalization.

Ederington's 2002 paper titled *Trade and Domestic Policy Linkage in International Agreements,* published in *International Economic Review,* was the third most cited paper during this period, with 31 citations. The paper analyzed the integration of domestic policies, including environmental regulations and labor standards, into trade agreements, evaluating the conditions under which linking these policies with trade provisions enhances the enforceability of international agreements, and questioning the extent of their perceived benefits.

In addition to these influential articles, a small number of authors stood out for their prolific contributions during Period A. Nyland and O'Rourke, who collaborated on two articles, focused on the implications of integrating labor standards into Australian trade agreements, addressing labor rights protections and the challenges posed by trade liberalization. Scherrer, with two articles during this period, examined the political and economic justifications for incorporating social clauses into trade agreements.

Figure 5 Period A: Most prolific authors

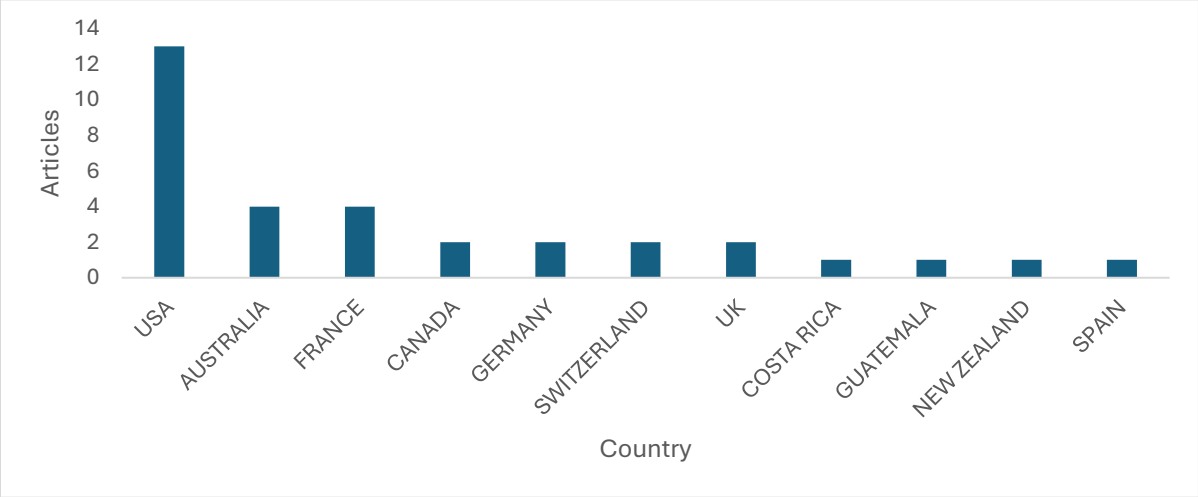


This figure displays the most prolific authors during Period A (1993–2007). Nyland and O'Rourke authored two articles each, focusing on labor standards in trade agreements, while Scherrer also contributed two articles, examining the political and economic rationale for including social clauses in trade agreements.

Influential Countries

Authors affiliated with institutions in the United States were the most active contributors to research on labor and environmental provisions in trade agreements during Period A, publishing 13 articles. Much of this research focused on both labor and environmental standards, often emphasizing the implications of NAFTA, reflecting the central role of the agreement in shaping trade policy debates and the strong institutional support for policy-oriented research.

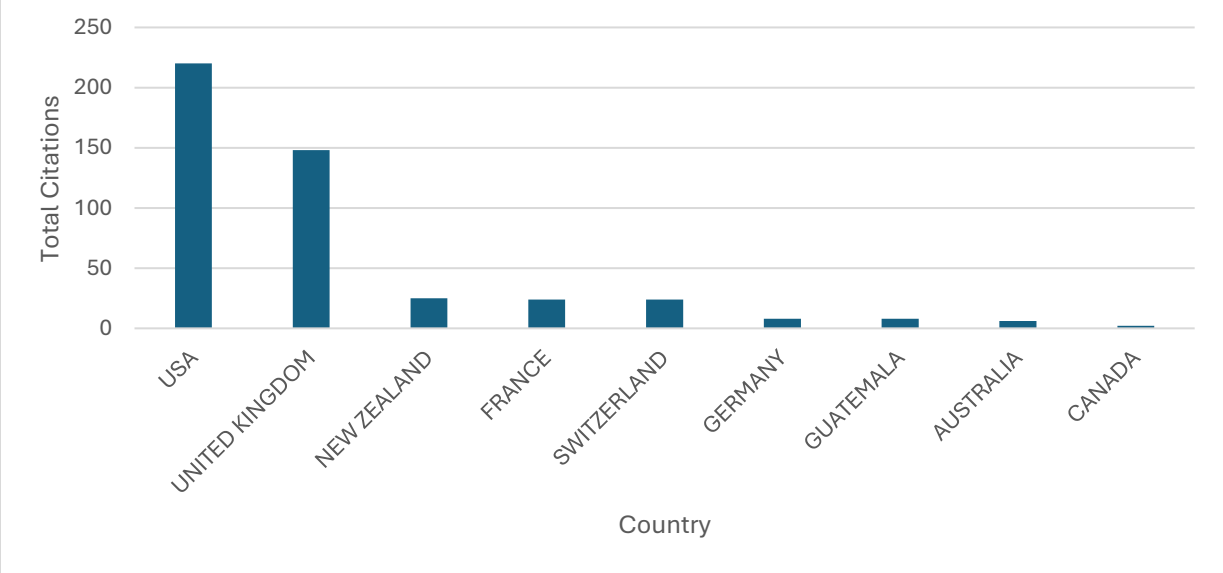
Figure 6 Period A: Country scientific production



This figure displays the country scientific production during Period A (1993–2007). Authors affiliated with institutions in the United States contributed the most articles (13), followed by Australia and France.

In terms of citation impact, the United States and the United Kingdom led by a considerable margin, with New Zealand also achieving some influence despite having only one article published in this period.

Figure 7 Period A: Total Citations per Country



This figure displays the total citations per country during Period A (1993–2007). The United States and the United Kingdom had the highest citation impact, followed by New Zealand.

Thematic and Keyword Analysis

The co-occurrence network and keyword frequency analysis show that "trade agreement" and "international cooperation" were dominant terms. These terms were frequently associated with "NAFTA," emphasizing its role as a pioneering case study for examining the interactions between trade liberalization and sustainable development objectives. The presence of "environmental protection" and "USA" further illustrates the geographic and policy-specific contexts that shaped the academic discourse during this period.

The thematic map showcases distinct clusters of scholarly activity, with "trade agreements," "NAFTA," and "international cooperation" emerging as motor themes, topics central to the sub-field's development in this period. Meanwhile, terms like "environmental protection" and "USA" occupy the niche theme quadrant, indicating a focus on specialized topics relevant to regional or national contexts.

These findings indicate that during Period A, the field was in its formative stages, with researchers laying the groundwork for understanding the intersection of trade and sustainability.

Figure 8 Period A: Co-occurrence network



Figure 9 Period A: Thematic map

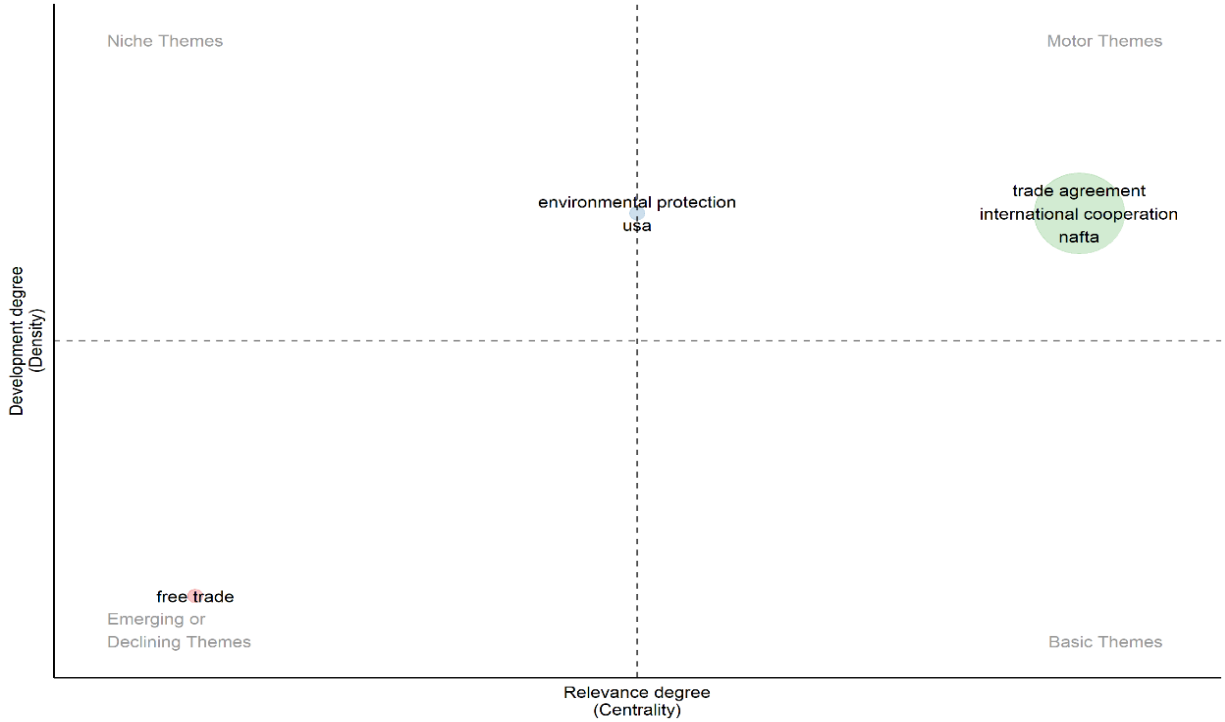


Figure 10 Period A: Most frequent words



These figures illustrate thematic and keyword trends during Period A (1993–2007). The co-occurrence network (Figure 8) shows the relationships between key terms. The thematic map (Figure 9) highlights clusters of scholarly activity, and the keyword frequency analysis (Figure 10) visualizes the most frequently used terms in the literature.

2.4.2 Period B (2008 – 2015)

Building on the developments of Period A (1993-2007), where sustainability provisions began to gain recognition, Period B (2008-2015) witnessed a more pronounced integration of these

concepts into trade agreements. During this period, academic discourse transitioned from theoretical explorations to a more critical examination of the practical implementation and broader implications of sustainability provisions. The scope of these provisions expanded to include climate change, human rights, and regional sustainability impacts, reflecting an evolving agenda that sought to tackle wicked and complex global challenges.

Unlike Period A, which primarily focused on establishing theoretical frameworks, Period B engaged deeply with the complexities of integrating sustainability into trade policy. One of the central themes during this period was the evolving role of trade agreements in enforcing sustainability provisions. Adriaensen and González-Garibay (2013) scrutinized the enforcement mechanisms of bilateral and multilateral agreements, highlighting the inconsistencies in compliance. The inclusion of environmental provisions in regional trade agreements was often undermined by weak monitoring systems and power asymmetries between negotiating parties. Baghdadi, Martinez-Zarzoso, and Zitouna (2013) emphasized the need for robust benchmarks and monitoring mechanisms to ensure adherence to environmental standards, underlining the challenges of turning commitments into actionable outcomes.

Climate change emerged as an area of focus, with researchers exploring the integration of climate-related provisions within trade agreements. Bechtel and Tosun (2009) analyzed the inclusion of climate mitigation measures, noting that while there was increasing recognition of the importance of addressing climate change through trade policy, significant obstacles remained. These challenges included the lack of coherence between trade and environmental objectives and the difficulty of aligning carbon standards between trading partners. Holzer and Cottier (2015) discussed the potential for mutual recognition of carbon standards within trade agreements, but they also highlighted the political and regulatory hurdles that impeded progress. The period thus marked a shift from merely advocating for the inclusion of climate change-related provisions to critically examining the barriers to their effective implementation.

The adoption of advanced methodologies during this period allowed researchers to provide empirical evidence on the impacts of sustainability provisions. Baghdadi et al (2013) utilized econometric techniques such as propensity score matching and difference-in-differences analysis to isolate the effects of environmental provisions on carbon emissions. These approaches provided nuanced insights into how specific clauses in trade agreements could influence environmental outcomes, moving the field beyond theoretical claims. Similarly, Bechtel and Tosun (2009) employed game-theoretic modeling to explore strategic interactions in negotiations, shedding light on the conditions under which policy convergence might occur.

These methodological advancements not only enhanced the credibility of research but also offered policymakers actionable insights into the design of trade agreements.

In this period, interdisciplinary approaches became more prominent as scholars integrated perspectives from political science, economics, and environmental studies to address the multifaceted challenges of sustainable trade. Jinnah and Morgera (2013) examined the role of international legal frameworks in supporting the enforcement of sustainability provisions, while Bechtel and Tosun (2009) explored the interplay between global supply chains and sustainability. This interdisciplinary shift allowed researchers to move beyond traditional economic analyses and incorporate political and environmental considerations, resulting in a more holistic understanding of the challenges and opportunities associated with sustainability provisions.

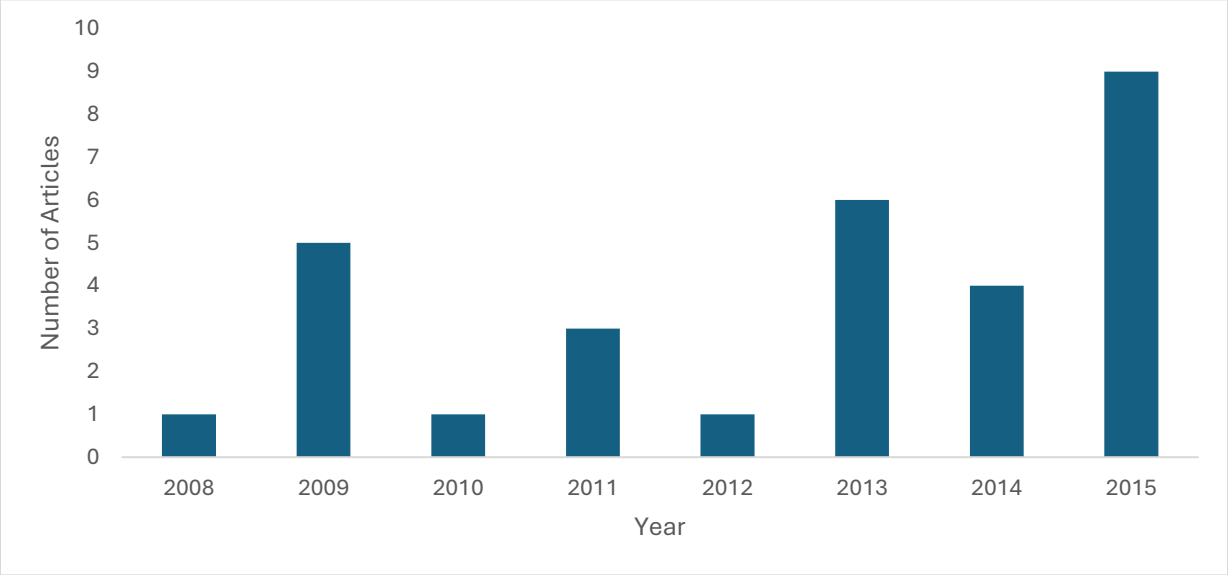
New policy approaches also emerged as researchers recognized the need for adaptive mechanisms within trade agreements. Vogt (2015) argued for the inclusion of flexible provisions that could respond to emerging environmental challenges, suggesting that trade agreements should be designed to accommodate evolving sustainability goals. Postnikov and Bastiaens (2014) emphasized the importance of incorporating social clauses to enhance labor protections, while Jinnah and Lindsay (2015) highlighted the dynamic nature of global sustainability challenges and the need for responsive policy frameworks.

While Period B demonstrated a growing rhetorical commitment to aligning trade with sustainable development, the practical realization of these goals often fell short. Non-binding language, competing economic priorities, and a lack of enforcement mechanisms continued to undermine the effectiveness of sustainability provisions. However, this period marked a significant advancement in the research focus, as scholars began to critically analyze the barriers to implementation and explore innovative solutions. These efforts set the stage for Period C, where the integration of sustainability provisions in trade agreements would be examined with even deeper empirical rigor.

Publication Trends

A total of 30 journal articles were published during this period, a small increase from Period A. The higher output between 2013 and 2015 suggests a sustained interest in and engagement with research on international trade and sustainable development, potentially driven by the proliferation and evolution of regional trade agreements.

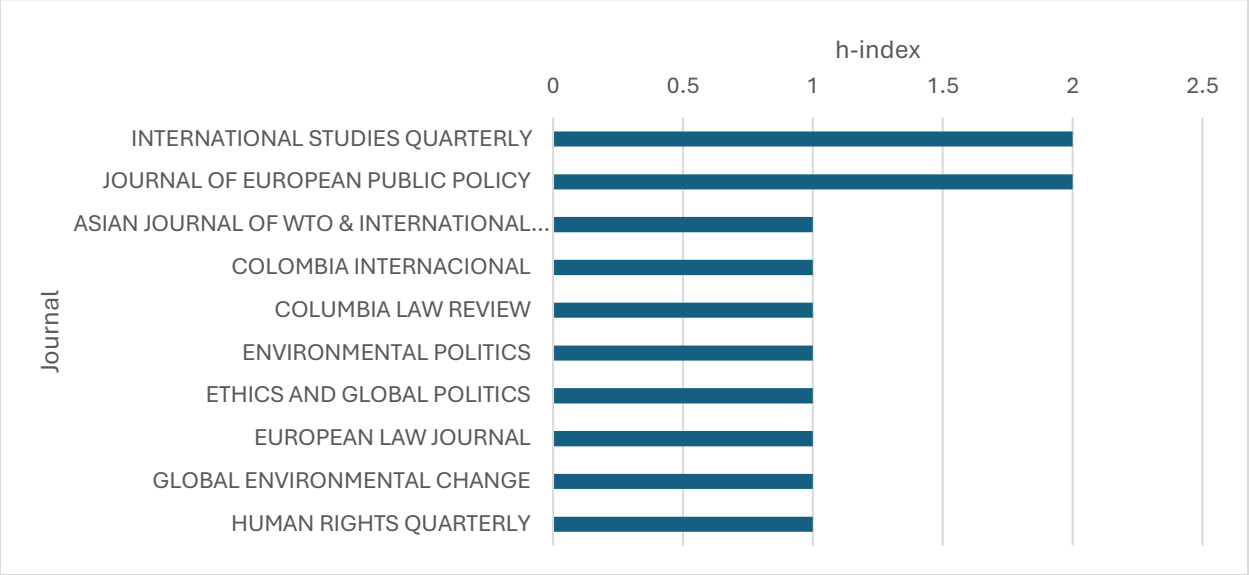
Figure 11 Period B: Annual Scientific Production



This figure displays the annual scientific production of articles during Period B (2008–2015). The number of articles published shows an increase over time, with higher output between 2013 and 2015.

During Period B, the journals with the highest h-index publishing research on sustainability provisions in trade agreements were *International Studies Quarterly* and the *Journal of European Public Policy.* This differs from Period A, where the *Journal of Industrial Relations* and the *Columbia Journal of Transnational Law* were leading contributors. New journals contributing to the discourse during Period B included the *Asian Journal of WTO and International Health Law and Policy* and *Environmental Politics.* While the journals prominent in Period A often published articles addressing labor relations and transnational legal frameworks, the journals in Period B reflected an increasing interest in global governance and environmental policy within the context of trade agreements. These changes suggest an evolving publication landscape, with broader engagement across disciplines.

Figure 12 Period B: Most influential journals



This figure shows the most influential journals during Period B (2008–2015) based on h-index values. International Studies Quarterly and the Journal of European Public Policy had the highest h-index values

Influential Authors and Articles

Similar to Period A, only a few articles from Period B were highly cited. Baghdadi et al.'s 2013 article, *Are RTA Agreements with Environmental Provisions Reducing Emissions?* published in the *Journal of International Economics,* was the most cited article during this period, with 81 citations. This study examined the effectiveness of environmental provisions in reducing emissions under regional trade agreements, building upon the environmental governance discussions initiated in Period A.

The second most cited article, Postnikov and Bastiaens' 2014 paper, *Does Dialogue Work? The Effectiveness of Labor Standards in EU Preferential Trade Agreements,* published in the *Journal of European Public Policy,* had 74 citations. Similar to earlier articles by Kabeer and Limão in Period A, this study focused on labor standards but explored alternative enforcement mechanisms, including dialogue and soft law, signaling an evolution in how these provisions were analyzed

Kim's 2012 paper, *Ex Ante Due Diligence: Formation of PTAs and Protection of Labor Rights,* published in *International Studies Quarterly,* was the third most cited article, with 61 citations. This research addressed the inclusion of labor provisions in preferential trade agreements through pre-negotiation assessments.

Figure 13 Period B: Citations per year

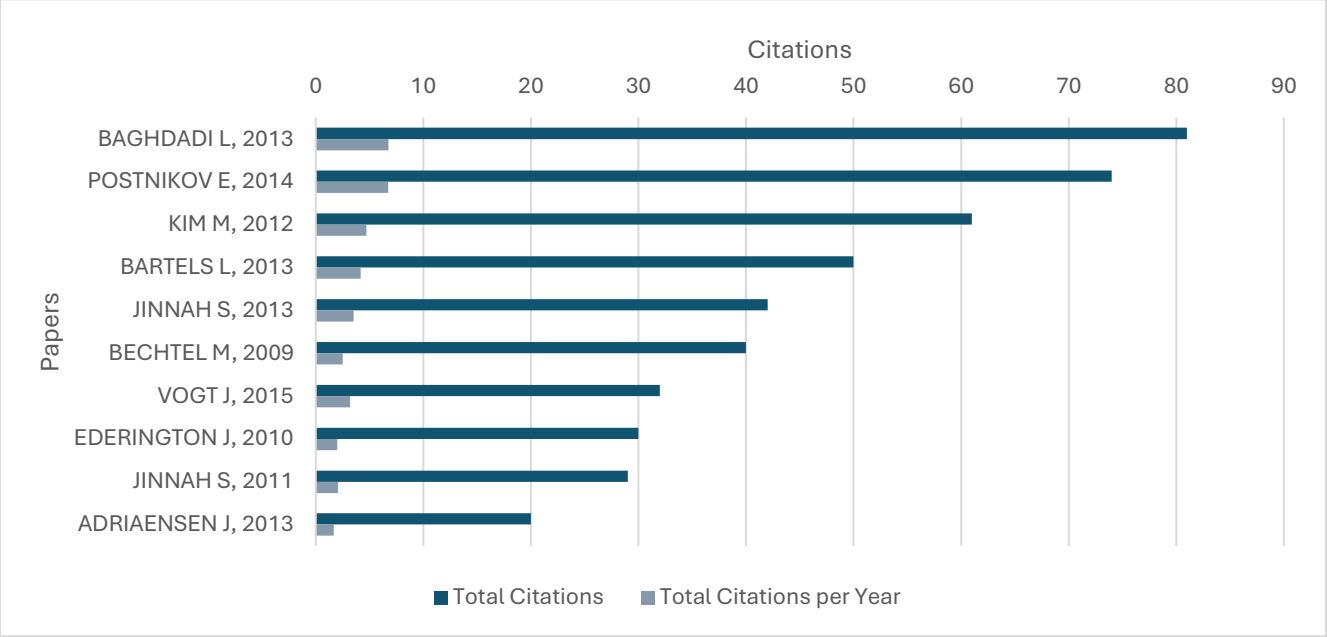
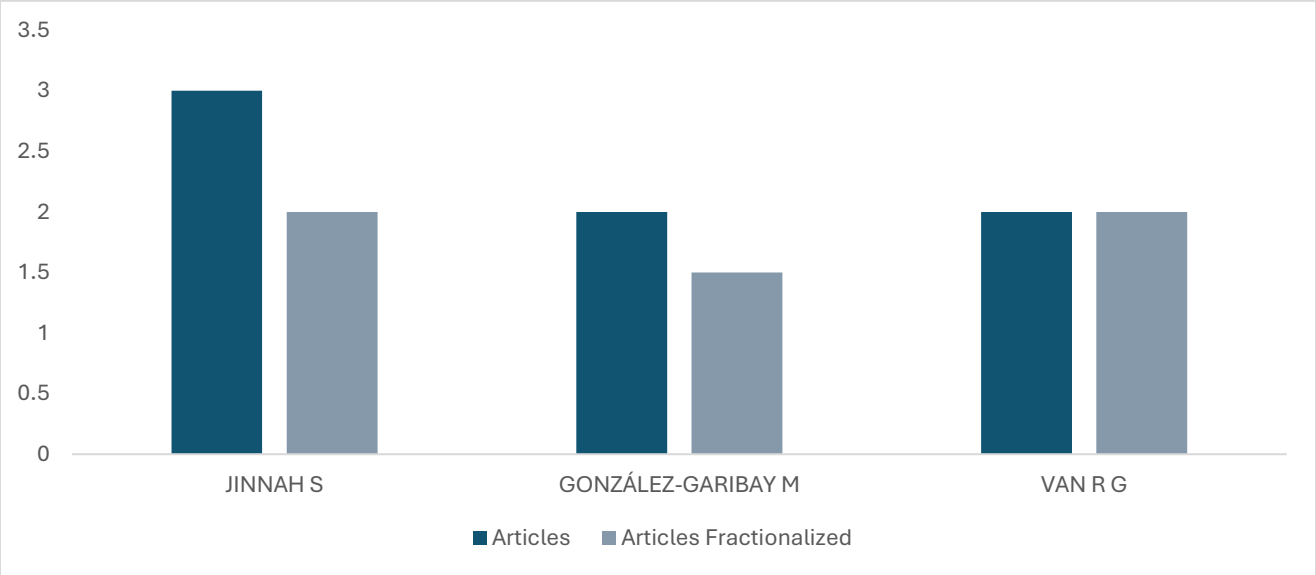


Figure 14 Period B: Most prolific authors



These figures show influential contributions during Period B (2008–2015). Figure 13 shows the citations per year, with Baghdadi et al. (2013) receiving the highest total citations, followed by Postnikov and Bastiaens (2014) and Kim (2012). Figure 14 presents the most prolific authors, with Jinnah leading in total articles published, followed by González-Garibay and Van R

During this period, Jinnah authored three articles, including analyses of environmental provisions in trade agreements and the role of governance mechanisms in international environmental cooperation amongst trade partners. González-Garibay and Van R contributed

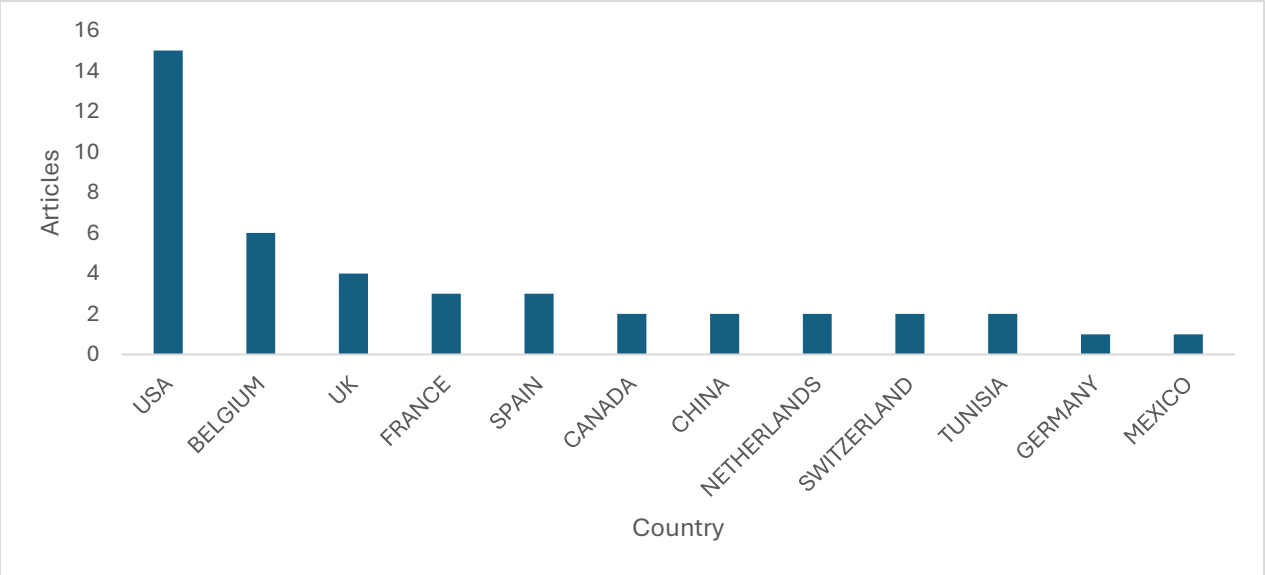
two articles each, with González-Garibay focusing on institutional frameworks for labor and environmental standards in trade policy and Van R examining the implementation and effectiveness of sustainability provisions. These contributions highlight a continued engagement with governance and policy mechanisms, advancing the foundational work of Period A.

Influential Countries

Authors affiliated with institutions in the United States continued to dominate research on labor and environmental provisions in trade agreements during Period B, publishing 15 articles. This mirrors the pattern observed in Period A, where the United States also had the highest number of publications.

Belgium and the United Kingdom followed as significant contributors during Period B, with 5 and 4 articles respectively. While the UK's output remained comparable to its contributions in Period A, Belgium's emergence highlights a diversification in scholarly engagement. Other countries, including Spain, France, and Switzerland, each with 3 articles, further demonstrated the growing international interest in sustainability provisions in trade agreements.

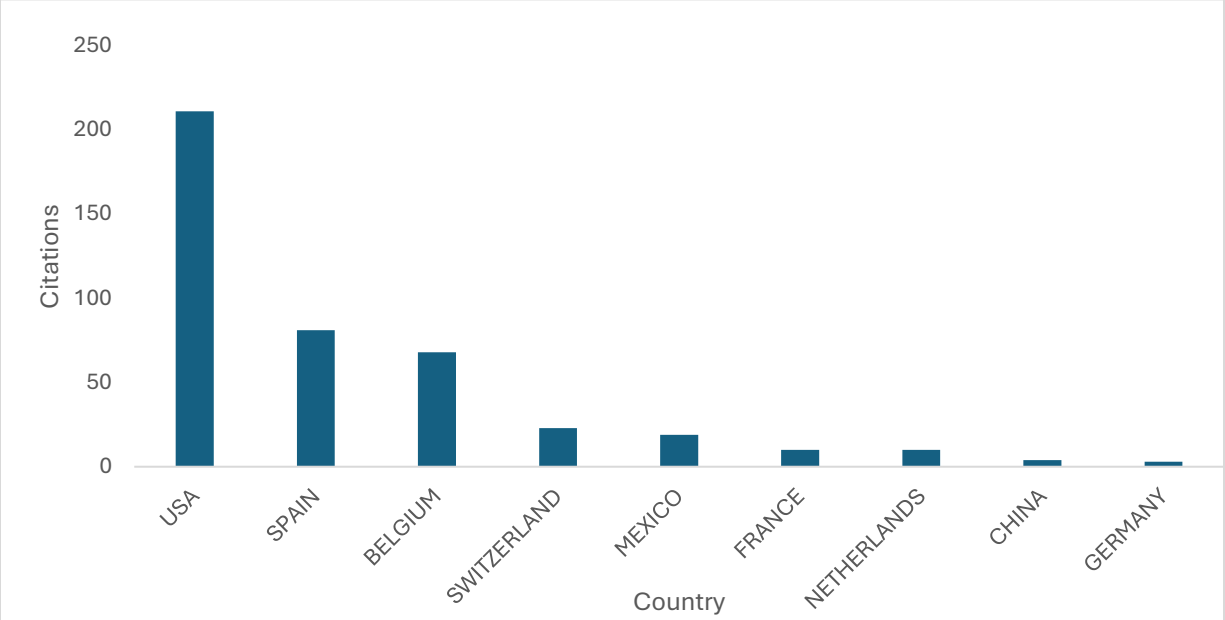
Figure 15 Period B: Country scientific production



This figure shows the country scientific production during Period B (2008–2015). The United States contributed the highest number of articles (15), followed by Belgium and the United Kingdom, with 5 and 4 articles, respectively

In terms of citation impact, the United States maintained its leading position, garnering over 200 citations, like its impact in Period A. Spain and Belgium also demonstrated strong influence, with 100 and 75 citations respectively.

Figure 16 Period B: Citations per Country



This figure shows the total citations per country during Period B (2008–2015). The United States had the highest citation count, followed by Spain, Belgium, and Switzerland

Thematic and Keyword Analysis

The co-occurrence network and keyword frequency analysis continue to show "United States" and "trade agreement" as dominant terms, maintaining their centrality from Period A. However, new associations emerge, with "environmental policy" and "human rights" reflecting a broader thematic scope that incorporates both environmental and social dimensions. The addition of "European Union" and "bilateral agreements" reveals an expanded focus on other geopolitical contexts, signaling a diversification away from the North American-centric lens of Period A.

The thematic map illustrates distinct clusters of scholarly activity. "Environment" and "international trade" emerge as motor themes, representing central and well-developed topics in the field. These themes show a growing emphasis on addressing global environmental challenges through trade policies, building on the foundational discussions of Period A. New motor themes, such as "European Union" and "policy diffusion," indicate increased attention to regional and institutional dynamics, reflecting the expanding scope of the field during this period.

These findings suggest that Period B marked a budding maturation of the field, with researchers expanding their focus to include a wider range of actors, themes, and methodologies.

Figure 17 Period B: Co-occurrence network



Figure 18 Period B: Thematic map

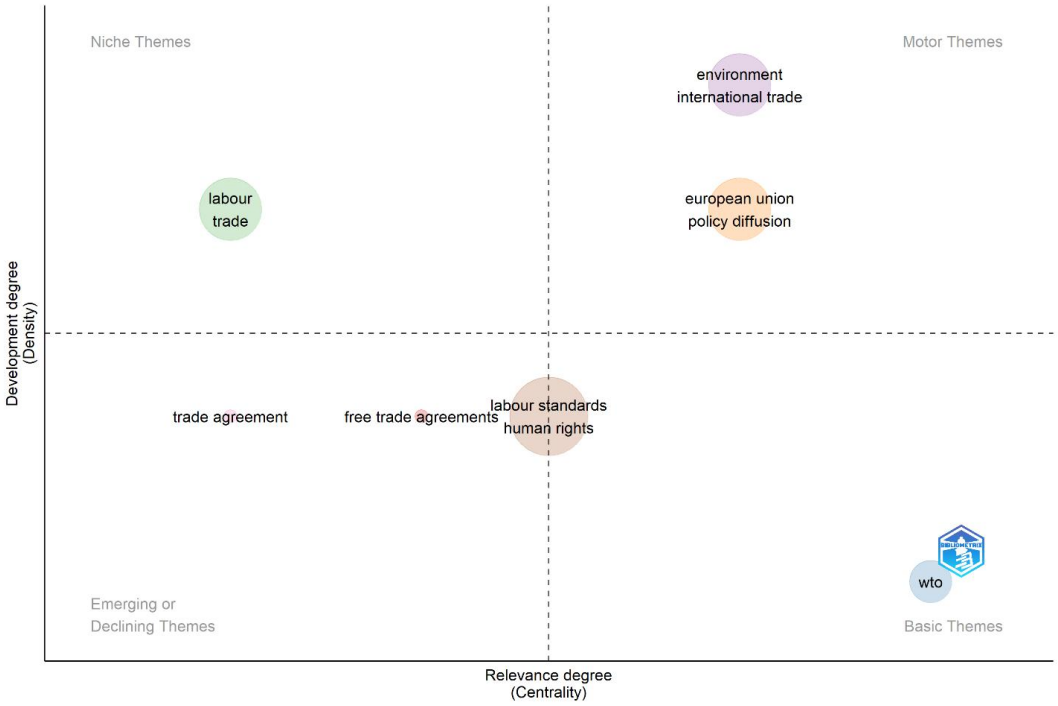


Figure 19 Period B: Most frequent words



These figures analyze thematic and keyword trends during Period B (2008–2015). The co-occurrence network (Figure 17) illustrates relationships between key terms. The thematic map (Figure 18) highlights clusters of scholarly activity. The keyword frequency analysis (Figure 19) visualizes the prominence of terms.

2.4.3 Period C (2016 -2023)

Building upon the broader integration observed during Period B (2008-2015), the period from 2016 to 2023 marked an intensification and maturation of academic discourse on sustainability provisions in trade agreements. Unlike earlier periods, where the focus often remained on conceptual debates or incremental expansions of scope, Period C shifted decisively toward evaluating practical implementation and measurable outcomes. This transition was catalyzed by the proliferation of trade agreements incorporating a wider variety of sustainability provisions, as countries experimented with and implemented new approaches. These agreements provided scholars with numerous empirical cases to analyze. It was further driven by growing political momentum to align economic policies with global environmental and social goals.

While earlier periods highlighted the inclusion of these provisions as aspirational milestones, researchers during Period C critically examined their enforceability. Jinnah and Lindsay (2016) observed that balancing economic priorities with environmental and social objectives remained a persistent challenge, which often limited the effectiveness of these provisions. Ebert (2016) further emphasized that political will and robust institutional frameworks were critical to overcoming enforcement challenges, particularly in addressing sector-specific sustainability issues.

Period C also witnessed the integration of broader sustainability concerns into the core objectives of trade agreements. Unlike earlier periods, where labor and environmental standards often served as standalone components, this period saw a more holistic approach. The alignment of trade policies with the SDGs provided a clear framework for linking trade with global sustainability targets. Researchers explored how agreements addressed climate mitigation, biodiversity protection, and resource efficiency, demonstrating a marked shift toward embedding environmental protection as a central objective of trade.

In addition to environmental concerns, the inclusion of social and human rights provisions became a prominent feature of trade agreements during this period. Commitments to uphold labor rights, gender equality, and other social objectives transformed these provisions from peripheral considerations into central elements of trade policy. Ebert (2016) and Lechner (2016) examined the implementation of these provisions, highlighting both their potential to influence trade relationships and the challenges associated with ensuring compliance. Their research showed that while these provisions were ambitious, their effectiveness often depended on the political will of the parties involved and the robustness of the enforcement mechanisms.

The development of large-scale datasets such as the Trade and Environment Database (TRENDs) (Morin, Dür, et al., 2018) and the LABPTA database (Raess & Sari, 2018) facilitated more comprehensive analyses of sustainability provisions and further reflected the maturity of the field. These databases provided scholars and policymakers with repositories of sustainability provisions for ease of analysis and replication as needed.

Despite these advancements, some challenges remained persistent, particularly in implementation, enforcement and the sector-specific impacts of sustainability provisions. Researchers highlighted gaps in empirical studies on long-term impacts, emphasizing the need for longitudinal analyses to assess the conditions under which these provisions were most effective.

In Period C, the transition towards evidence-based, outcome-focused research positioned trade agreements as instruments capable of advancing sustainable development rather than merely serving as aspirational economic policy tools.

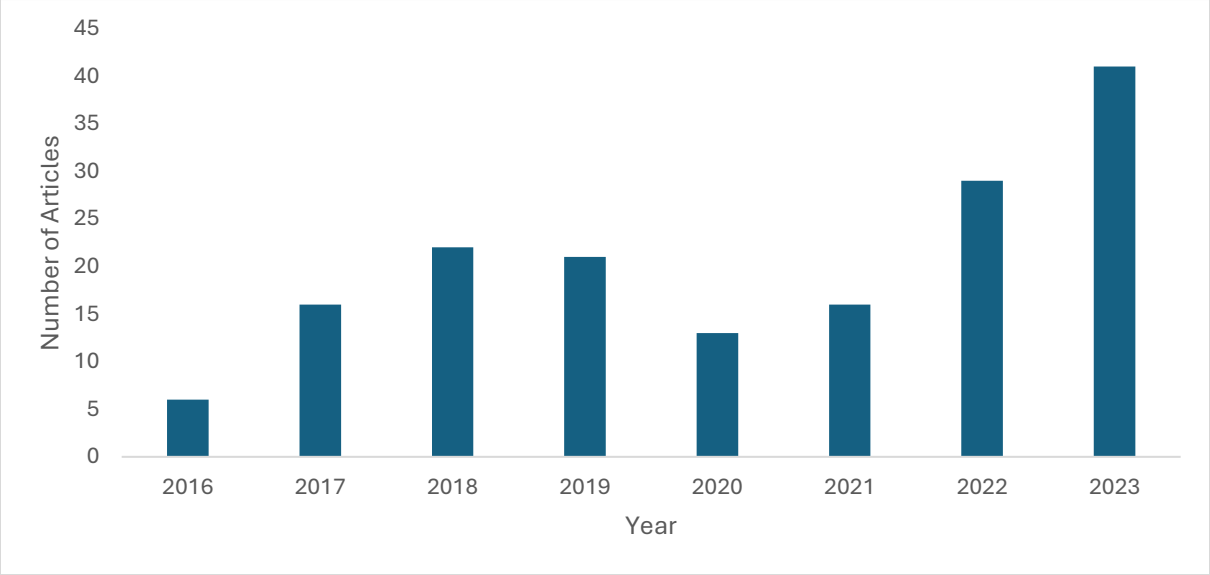
Publication Trends

A total of 164 journal articles were published during Period C (2016–2023), marking a notable increase compared to Periods A (27 articles) and B (30 articles). While the earlier years of this period (2016–2017) had relatively lower publication numbers, the latter half of the period

demonstrated substantial growth. In 2023, there were 40 articles published, representing the highest annual output across all three periods.

This upward trajectory demonstrates the growing scholarly interest in the sub-field of sustainability provisions in trade agreements, coinciding with broader global recognition of the importance of integrating sustainability provisions into trade agreements.

Figure 20 Period C: Annual Scientific Production



This figure displays the annual scientific production of articles during Period C (2016–2023). The number of articles published increased significantly over time, with 2023 recording the highest annual output of 40 articles.

The research published during Period C appeared in a diverse set of academic journals, with *Politics and Governance* and *Global Environmental Politics* emerging as the most impactful, each achieving the highest h-index values of 5. Other journals, such as the *International Labour Review* and the *Journal of International Economic Law,* also contributed significantly to the discourse, maintaining h-index values of 4.

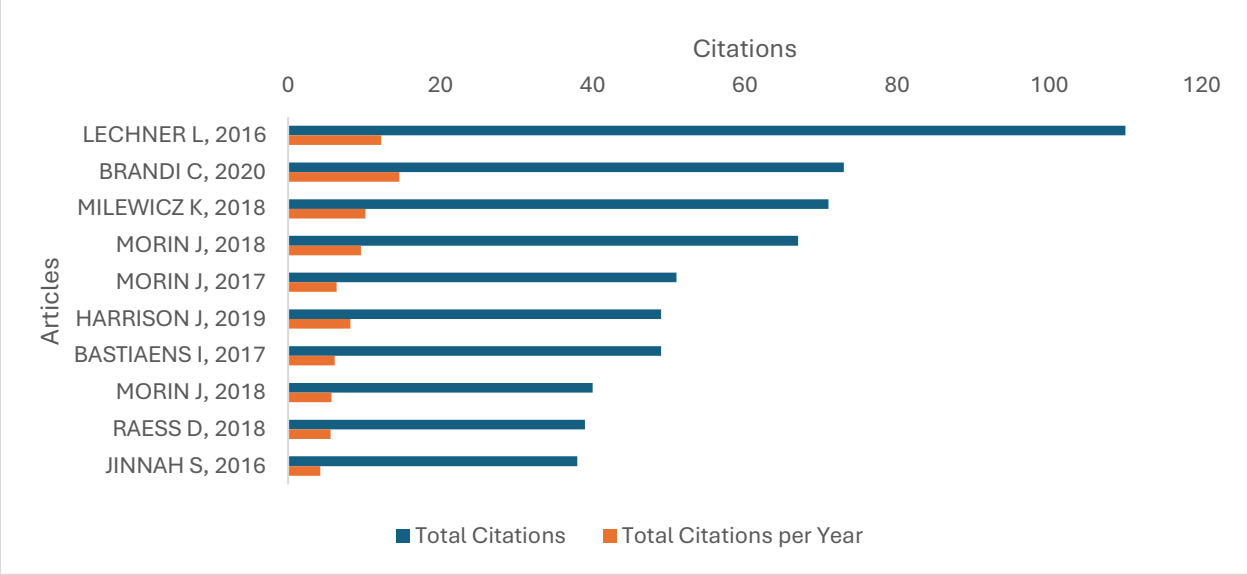
Compared to earlier periods, Period C exhibited a wider distribution of publications across journals, with newer additions like *Global Policy* and *Environmental Politics* expanding the range of outlets. The higher h-index values in this period reflect the increasing citation impact of journals publishing research on sustainability provisions, suggesting heightened influence and engagement within multiple scholarly domains. This trend, combined with the broader range of journals contributing to this period's output, highlights the expanding interdisciplinary nature of the field and its dynamic evolution.

Influential Authors and Articles

Period C had a higher proportion of highly cited articles compared with other periods, demonstrating the increasing maturity and influence of research on sustainability provisions in trade agreements.

Lechner's 2016 article, *The Domestic Battle over the Design of Non-Trade Issues in Preferential Trade Agreements,* published in the *Review of International Political Economy,* was the most cited article with 110 citations. This study analyzed how various interest groups and political actors within countries shape the design of these agreements and provided insights into the interplay between domestic politics and international trade policy.

Figure 21 Period C: Citations per year



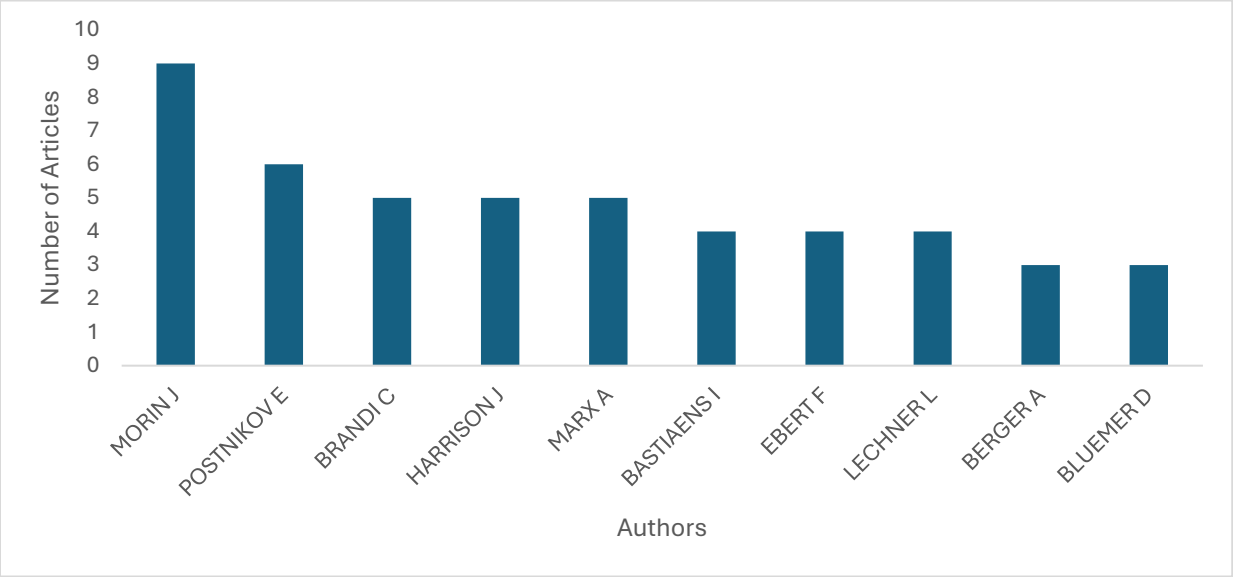
This figure displays the citations per year for influential articles during Period C (2016–2023). Lechner (2016) received the highest total citations, followed by Brandi (2020) and Milewicz (2018).

Brandi et al.'s 2020 paper, *Do Environmental Provisions in Trade Agreements Make Exports from Developing Countries Greener?* published in *World Development,* ranked second with 73 citations. This paper evaluated the extent to which environmental provisions encourage sustainable trade by transforming production and export processes and offered evidence of their effectiveness in promoting environmental goals alongside economic development.

The third most cited article, *Beyond Trade: The Expanding Scope of the Non-Trade Agenda in Trade Agreements* by Milewicz et al. (2018), published in the *Journal of Conflict Resolution,*

garnered 71 citations. In this study, the authors explored how trade agreements are increasingly used to advance broader policy objectives, illustrating a shift in the scope and purpose of trade agreements.

Figure 22 Period C: Most prolific Authors



This figure shows the most prolific authors during Period C (2016–2023).

In terms of prolific authors, Morin had the highest number of publications in this period with nine articles. Postnikov and Brandi followed with five articles each. Harrison, Marx, and Bastiaens were also active contributors, each authoring four articles during this period.

Influential Countries

Authors affiliated with institutions in the United Kingdom were the most active contributors during Period C, publishing 55 articles. This is a notable shift from both Periods A and B, where authors from institutions in the United States consistently led in publication output. The United States followed closely with 50 articles, maintaining its significant role in this research area. Other key contributors included authors affiliated with institutions in Canada (45 articles), Switzerland (40 articles), and Germany (35 articles).

Figure 23 Period C: Country Scientific production

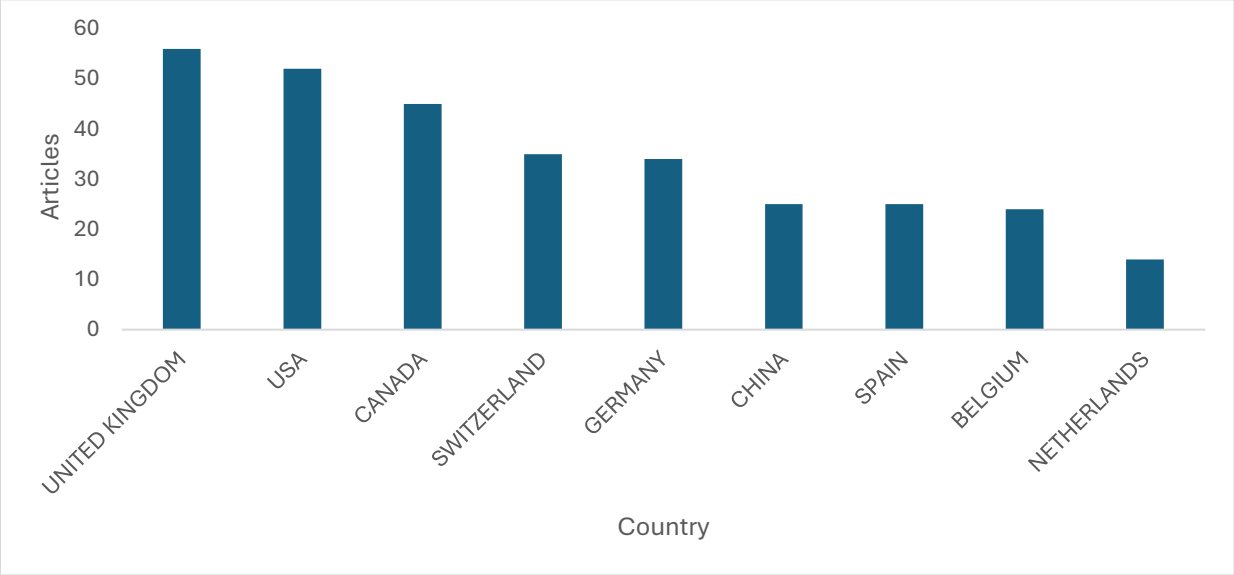
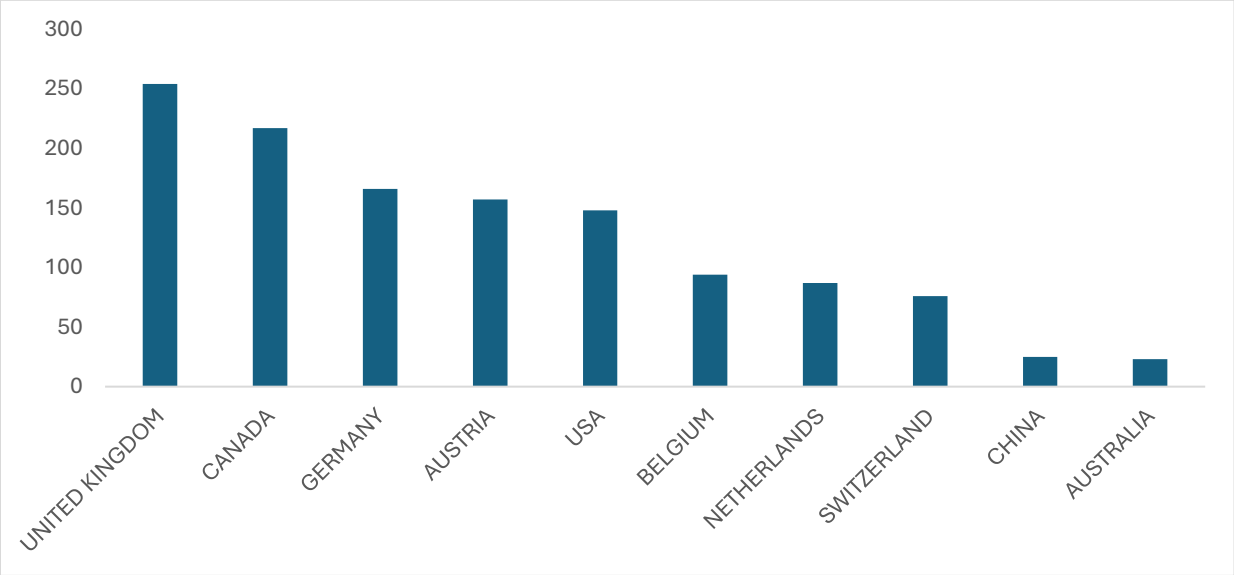


Figure 24 Period C: Citations per Country



These figures summarize the scientific contributions and citation impact by country during Period C (2016–2023). Figure 24 shows that the United Kingdom led in scientific production with 55 articles, followed by the United States (50 articles) and Canada (45 articles). Figure 25 highlights citation impact, with the United Kingdom garnering 254 citations, followed by Canada (217) and Germany (166)

In terms of citation impact, authors affiliated with institutions in the United Kingdom had the highest influence, with nearly 300 citations, indicating the global reach of their research. Authors from Canada and Germany also achieved high citation counts, highlighting the relevance of

their contributions. Australia, while producing fewer articles, demonstrated strong citation performance, reflecting the quality and impact of its research during this period.

Thematic and Keyword Analysis

The co-occurrence network shows that "trade agreements," "climate change," and "European Union" were central terms in Period C, reflecting the increasing integration of global environmental challenges into trade policies. The appearance of "USMCA" indicates a continued focus on case studies, while the broader network demonstrates a shift toward examining global governance frameworks and sustainability standards.

The thematic map illustrates an evolved research landscape. "Trade agreements" and "climate change" remain motor themes, indicating their central role in discussions of trade and sustainability. The prominence of "European Union" reflects its leadership role in embedding sustainability objectives within its trade policies. "Issue linkage" and "deep trade agreements" appear as emerging themes, suggesting sustained interest in the theoretical and structural mechanisms underpinning sustainability provisions in trade agreements.

The frequency analysis of keywords aligns with these findings. Terms such as "standards" and "design" dominate discussions, emphasizing the increasing focus on the architecture of sustainability provisions. The inclusion of "rights" and "governance" points to a growing focus on social dimensions and the mechanisms through which sustainability objectives are implemented and operationalized. Additionally, "diffusion" reveals an increasing interest in how sustainability norms are transferred and adapted across different trade agreements and regional contexts.

These findings demonstrate that Period C represents the sub-field's progression toward a more comprehensive and evidence-based understanding of sustainability provisions in trade agreements.

Figure 25 Period C: Co-occurrence network

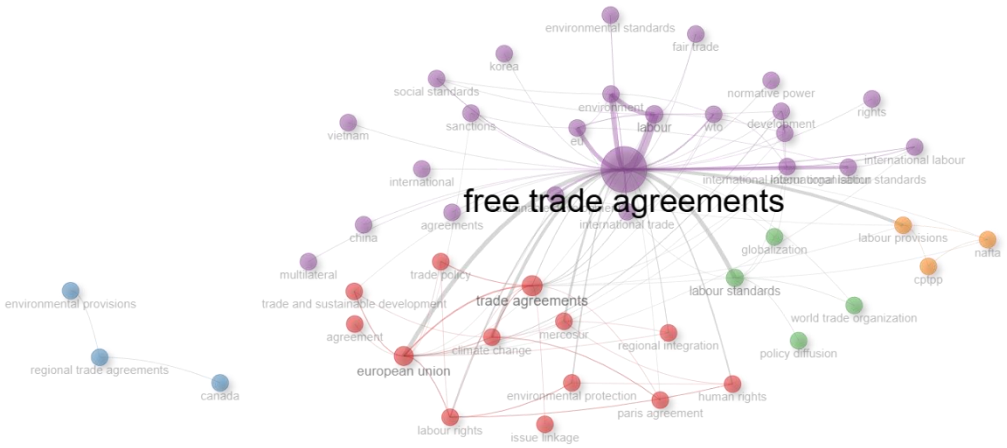
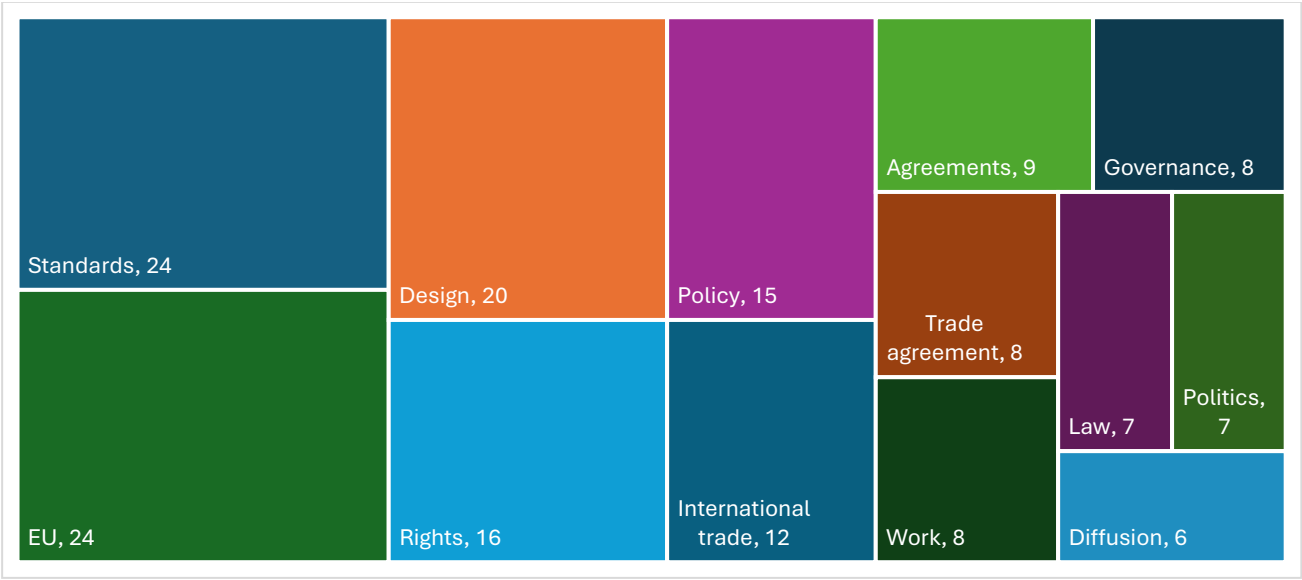


Figure 26 Period C: Most frequent words



These figures analyze thematic and keyword trends during Period C (2016 – 2023). The co-occurrence network (Figure 25) illustrates relationships between key terms. The keyword frequency analysis (Figure 26) visualizes the prominence of terms.

2.5 Conclusion

In this chapter, I conducted a bibliometric analysis of the literature on sustainability provisions in trade agreements, providing insights into the state of knowledge in this niche, yet important sub-field. By leveraging data from both Scopus and Web of Science, I address the limitations of

single-database reliance observed in prior studies and offer a comprehensive mapping of academic contributions. I also lay a foundation for understanding the evolution of research on sustainability provisions, describing key trends, thematic focuses, and gaps in the literature.

Based on the results of this analysis, I conclude the following:

- Research on sustainability provisions in trade agreements has expanded significantly over the past three decades, with notable surges in publication output in between 2016 and 2023 (Period C). This growth reflects an increasing recognition of sustainability provisions in trade agreements as viable instruments for advancing the goal of sustainable development.
- Despite the overall growth, the literature remains fragmented, often treating environmental and labor provisions as separate areas of inquiry rather than integrated components of sustainability. This compartmentalization may limit the ability of researchers and policymakers to develop holistic approaches to sustainability provisions.
- Authors affiliated with institutions in the Global North have consistently led research in this sub-field, particularly in the United States, the United Kingdom, and Canada. This regional concentration likely reflects the availability of resources and institutional priorities in these geographical regions, but highlights a gap in contributions from the Global South. This imbalance, however, must be interpreted with caution, as the choice of English-language journal articles indexed in Scopus and Web of Science may have excluded relevant perspectives from non-English-speaking regions and smaller, regional journals.
- Over three decades (1993 -2023), the literature has evolved from foundational, theoretical studies on integrating labor and environmental provisions into trade agreements to more outcome-focused research. Recent studies increasingly address measurable impacts, enforcement mechanisms, and the alignment of trade agreements with broader sustainable development objectives.

This chapter makes three contributions. First, it provides a quantitative assessment of the state of research on sustainability provisions in trade agreements. Second, it highlights gaps in geographic and thematic coverage, offering a roadmap for future research. Third, it establishes a foundation for the analyses in subsequent chapters. The findings from this chapter sets the stage for Chapter 3, which examines the depth and coverage of sustainability provisions targeted at the forestry industry.

Chapter 3
Sustainability Provisions targeted at the Forestry Industry

3.1 Introduction

In this chapter, I systematically examine sustainability provisions targeting the forestry industry. These provisions, referred to hereafter as “forestry provisions,” are explored through the guiding question: “What sustainability provisions are directed at the forestry industry, and how does their depth and coverage vary across trade agreements?”. By analyzing the full range of forestry provisions embedded in trade agreements, this study provides insight into how the design of these commitments contribute to safeguarding forests and promoting sustainable development.

This inquiry is important because well-designed forestry provisions can help ensure that international trade does not accelerate deforestation, forest degradation, or biodiversity loss (Brandi et al., 2020; Peinhardt et al., 2019). They also have the potential to advance sustainable forest management across borders, aligning global trade policies with broader sustainable development objectives (Freer-Smith & Carnus, 2008; Luyssaert et al., 2018).

Forests serve different functions; they serve as carbon sinks, accommodate diverse species, and provide livelihoods for indigenous and local communities (Bottazzi et al., 2014). Yet illegal logging, deforestation, and the overexploitation of forest resources remain significant global challenges (Guan & Gong, 2015; Shimamoto, 2008). When trade in forestry goods and services is not adequately regulated through enforceable and specific provisions, it can exacerbate ecosystem degradation (Restrepo, 2019).

Despite the recognition of the importance of forestry provisions, comprehensive frameworks specifically designed to assess both their depth and coverage are scarce (Avesani et al., 2024). Many existing studies rely on broad environmental metrics that fail to capture forestry-specific features (Pacheco, 2021), while others adopt purely qualitative or purely quantitative methods that do not fully appreciate the complexity of these provisions (Abman & Lundberg, 2020; Baumgartner, 2019b). Recognizing these persistent research gaps, this chapter introduces the Forestry Provisions Depth and Coverage Index, a novel framework designed to evaluate the comprehensiveness of forestry provisions across a range of trade agreements by examining their scope and specificity, nature of commitment, intergovernmental mechanisms, and non-state actor engagement.

This chapter is organized as follows. Section 3.2 introduces the theoretical framework and describes how issue linkage theory and norm diffusion theory shape the Forestry Provisions

Depth and Coverage Index (FPDCI). Section 3.3 outlines the methods and data used in the study, focusing on the exploratory sequential mixed-methods approach. Section 3.4 presents the results. Section 3.5 offers concluding remarks with policy recommendations and suggestions for future research.

3.2 Theoretical framework

This study adopts a dual theory lens by integrating issue linkage theory and norm diffusion theory. These theoretical approaches provide complementary insights into how forestry provisions in trade agreements shape sustainable forestry outcomes. By applying this lens, the study captures both the structural incentives driving state behavior and the normative forces that entrench sustainability goals.

Trade agreements serve as more than economic instruments; they now also serve as platforms where sustainable development objectives are negotiated and refined (Cordonier-Segger,2021). Issue linkage theory (Hafner-Burton, 2005) offers a framework to understand how states use cooperation in one issue area to leverage cooperation in another, thereby increasing the likelihood of achieving mutually beneficial outcomes (Conconi, 2018; Sebenius, 1983). This theory is grounded in several key assumptions. One assumption is that states operate under resource constraints, which compel them to prioritize issues that offer significant reciprocal benefits (E. B. Haas, 1980). In this context, linking sustainability provisions to trade agreements can enhance cooperation by addressing multiple dimensions of sustainable development simultaneously (Koremenos et al., 2001; Tomz, 2012).

Maggi (2016) identifies three forms of issue linkage; enforcement linkage, participation linkage, and negotiation linkage, each of which has implications for trade and sustainable development outcomes. Enforcement linkage involves cross-issue penalties, such as imposing trade sanctions for breaches of environmental commitments and has been shown to promote compliance in both domains. Participation linkage uses the threat of sanctions to encourage participation in broader agreements, while negotiation linkage integrates discussions of multiple issues into a single negotiation framework (Maggi, 2016). These mechanisms illustrate the versatility of issue linkage in fostering cooperation, particularly when trade agreements embed sustainability provisions to achieve environmental and economic goals (Poast, 2013).

The increasing prevalence of sustainability provisions in trade agreements reflects the growing recognition of their role in promoting sustainable development (Velut et al., 2022). By linking

these provisions to trade benefits, agreements can facilitate the diffusion of sustainability norms and incentivize states to pursue sustainable trade practices (Jinnah & Lindsay, 2016).

Norm diffusion theory focuses on the transmission, adoption, and institutionalization of norms i.e., shared standards of behavior, across political borders (Bettiza & Dionigi, 2015; Jinnah & Lindsay, 2016). Norms shape expectations and guide state behavior, particularly in contexts where formal legal requirements may be absent or weak (Finnemore & Sikkink, 1998). Sustainable development norms are increasingly finding expression in trade agreements and are influencing both their design and implementation (Cordonier Segger, 2021; Hradilová & Svoboda, 2018; Jinnah & Lindsay, 2016).

Norm diffusion operates through multiple pathways. First, trade agreements act as norm entrepreneurs, embedding sustainability norms within their texts and signaling commitment to these principles (Jinnah & Lindsay, 2016). By including clauses addressing illegal logging, deforestation, and the sustainable management of forest resources, agreements set behavioral expectations and establish benchmarks for state compliance (Laraswati et al., 2022). Second, institutional frameworks within trade agreements, such as trade and sustainable development committees, compliance monitoring bodies, and cooperation committees, serve as conduits for norm diffusion (Jinnah & Lindsay, 2015). These institutions enable the exchange of best practices, knowledge transfer, and dialogue among member states, fostering the internalization of sustainability norms (Woolcock, 2013).

Norm diffusion theory also highlights the role of non-state actors, including NGOs, industry groups, and academic institutions, in amplifying and disseminating norms. Through advocacy, capacity building, and independent monitoring, these actors enhance the visibility and legitimacy of sustainability norms, pressuring states to align their practices with international standards (Finnemore & Sikkink, 1998). For example, NGOs often play a critical role in highlighting non-compliance with forestry provisions, mobilizing public opinion, and advocating for stronger enforcement measures.

The process of domestic adaptation is another key mechanism of norm diffusion. When states commit to trade agreements containing sustainability provisions, they frequently undertake domestic policy reforms to comply with the agreements' requirements (Busch et al., 2005; Dobbin et al., 2007). These reforms may include adopting stricter environmental regulations, establishing certification schemes for sustainable forestry products, or enhancing enforcement mechanisms against illegal logging. In this way, norms embedded in international agreements

filter down into domestic legal and policy frameworks, reinforcing their adoption and implementation.

Norm diffusion is not always linear or uniform; its effectiveness depends on factors like the alignment of international norms with domestic priorities, the presence of enabling institutions, and the capacity of states to implement reforms (Jinnah & Lindsay, 2016). In some cases, norm diffusion may encounter resistance due to competing interests, limited resources, or weak institutional frameworks, leading to uneven adoption or limited impact.

Together, these theories inform the creation of the Forestry Provisions Depth and Coverage Index (FPDCI), a novel framework that translates abstract concepts into measurable dimensions. Each dimension of the index corresponds to specific theoretical mechanisms: the economic incentives that link trade and environmental objectives (issue linkage) and the transmission and internalization of global sustainability norms (norm diffusion). By structuring the FPDCI around these dimensions, this study evaluates the first half of the hypothesis of this thesis - that more robust, issue-linked forestry provisions, correspond with stronger sustainable forestry outcomes in practice.

The scope of forestry provisions dimension assesses the breadth of sustainable forestry objectives addressed within a trade agreement by evaluating the range of distinct forestry topics included in it. A broader scope, addressing multiple forestry issues such as illegal logging, forest fires, and deforestation demonstrates the strategic linkage of various priorities to achieve mutual gains (Hafner-Burton, 2005). For example, provisions that simultaneously target deforestation and promote community stewardship of forests create synergies across environmental and socio-economic domains, enhancing the overall effectiveness of the agreement. Addressing a wide range of forestry issues allows trade agreements to leverage cooperation in one area to facilitate progress in others, thereby increasing the likelihood of achieving mutually beneficial outcomes (Conconi, 2018; Sebenius, 1983). At the same time, norm diffusion theory emphasizes the importance of embedding internationally recognized sustainability norms within trade agreements. Including a wide range of forestry topics enables trade agreements to facilitate the transmission and institutionalization of sustainable forestry norms, fostering a shared understanding and commitment to responsible forest resource management (Finnemore & Sikkink, 1998).

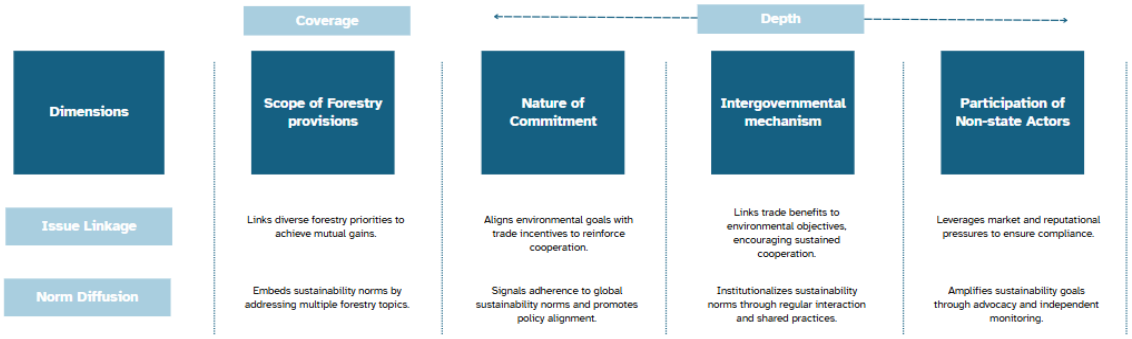
The nature of commitments dimension assesses the degree to which forestry provisions specify actionable goals, permit flexibility, foster cooperation, and/or enhance trade of sustainable forestry products. From an issue linkage perspective, commitments that align environmental

goals with economic incentives reinforce mutual gains (Hafner-Burton, 2005). For instance, trade agreements may encourage the use of eco-certification schemes to incentivize market access for sustainably harvested timber. Norm diffusion theory adds another layer of insight by highlighting how specific commitments signal adherence to internationally recognized sustainability standards (Finnemore & Sikkink, 1998). The presence of such commitments not only promotes compliance but also encourages states to adapt domestic policies to align with global norms, enhancing the credibility and impact of trade agreements.

The intergovernmental mechanisms dimension encompasses regulatory cooperation, technical assistance, compliance monitoring, and other institutional frameworks designed to facilitate the implementation of sustainability provisions. These mechanisms crystallize the intersection of issue linkage and norm diffusion theories. From the issue linkage perspective, such mechanisms incentivize states to uphold environmental objectives by linking them to trade benefits, ensuring sustained cooperation even in the face of resource constraints (Velut et al., 2022). For example, joint monitoring initiatives or shared databases on illegal logging practices can strengthen enforcement by pooling resources and expertise. Norm diffusion theory, meanwhile, underscores how these mechanisms institutionalize global norms into the everyday administrative routines of states (Keohane & Victor, 2016). By fostering regular interaction and information exchange, intergovernmental mechanisms not only enhance compliance but also create avenues for the iterative refinement and internalization of sustainability norms.

Finally, the non-state actor participation dimension captures the involvement of NGOs, industry groups, local communities, and other stakeholders in shaping, implementing, and monitoring forestry provisions. Non-state actors play a dual role: as norm entrepreneurs, they amplify sustainability goals through advocacy, capacity building, and independent monitoring (Finnemore & Sikkink, 1998); and as facilitators of issue linkage, they leverage reputational and market pressures to encourage state compliance (Hafner-Burton, 2005). For instance, NGOs often publicize instances of non-compliance, mobilizing public opinion and pressuring governments to adhere to agreed-upon commitments (Pacheco, 2021). Similarly, industry groups may develop voluntary standards or certification schemes that complement formal agreements, creating additional incentives for sustainable practices. The engagement of non-state actors enhances the transparency, accountability, and overall effectiveness of forestry provisions by bridging the gap between state commitments and ground-level implementation.

Figure 27 Theoretical framework



This figure illustrates the dual theoretical framework for the study, integrating issue linkage and norm diffusion theories. It describes how these theories inform the four dimensions of the proposed Forestry Provisions Depth and Coverage Index

3.3 Method and Data

This study adopts an exploratory sequential mixed methods design. This design involves an initial qualitative exploration followed by a quantitative phase, allowing for a comprehensive analysis that leverages the strengths of both methodologies. The exploratory sequential design is beneficial when existing quantitative measures are insufficient or when the research aims to develop new instruments based on qualitative insights (Creswell & Plano Clark, 2011). Plano Clark (2017) emphasizes that this design is effective in studies where initial qualitative findings are necessary to inform the quantitative phase.

The qualitative phase enables an in-depth understanding of the contexts and nuances of forestry provisions within trade agreements, which is important given their diversity and variability across different agreements. By first conducting a qualitative content and textual analysis, the study identifies themes, patterns, and contexts that inform the development of a novel index - the Forestry Provisions Depth and Coverage Index - in the quantitative phase.

3.3.1 Content and Textual Analysis

Content and textual analysis are systematic research methods used to interpret and analyze textual data by identifying patterns, themes, and meanings within the text (Neuendorf, 2017). Content analysis involves quantifying the presence of certain words, phrases, or concepts to understand their frequency and significance (Hsieh & Shannon, 2005). Textual analysis goes deeper to interpret the context, nuances, and underlying messages the text conveys. In the qualitative phase of this research, these methods were employed to examine the texts of 320 trade agreements from the World Trade Organization's RTA database.

Utilizing content and textual analysis allowed for a detailed examination of how forestry-related terms and provisions are presented within the trade agreements. The keyword search for "forest*" enabled the identification of agreements that mention forestry, while the subsequent manual review ensured an understanding of the context in which these mentions occurred. This step was important for distinguishing substantive provisions from mere references or administrative mentions, thereby focusing the analysis on relevant sustainability provisions.

A list of all 361 Regional Trade Agreements (RTAs) in force as of June 2023 was sourced from the World Trade Organisation's RTA database. Of these, 320 agreements were available in English and were used in the analysis. The texts of these 320 agreements were analyzed using NVivo software. The aim of this analysis was to identify and understand the context within which the keyword "forest*" appeared in the text of the trade agreements. A keyword search for “forest*” captures occurrences of the words forest, forests, and forestry. This search resulted in 83 agreements with at least one mention of the keyword. Using the NVivo results as a starting point, the keywords were manually located in the full texts of the trade agreements to determine the exact context in which "forest*" was used. Only occurrences where the word appeared as part of a provision or clause in the agreement were included, while mentions of the keyword in tariff tables, schedules, or as part of administrative titles were excluded. This contextual review reduced the list to 51 agreements. The forestry provisions were then manually extracted from the text of each of the 51 trade agreements for further analysis. See Appendix 1 for full list of analysed agreements.

3.3.2 Forestry Provisions Depth and Coverage Index (FPDCI)

The quantitative phase of this study adapts Hoekman’s (1995) approach in the development of a weighted index – the Forestry Provisions Depth and Coverage Index (FPDCI) - to evaluate forestry provisions in trade agreements.

Hoekman (1995) developed an index to rank General Agreement on Trade in Services (GATS) commitments based on sectoral coverage, quantifying the extent of liberalization across different service sectors. Building upon this approach, this study introduces the FPDCI, which evaluates each trade agreement’s forestry provisions across four dimensions: scope of forestry provisions, nature of commitment, intergovernmental mechanisms, and participation of non-state actors. By assigning weighted scores to these dimensions and calculating their mean, the FPDCI provides a comprehensive measure of both the depth and breadth of forestry commitments within trade agreements, facilitating a systematic comparison and highlighting areas of strength and weakness in promoting sustainable forestry practices.

- **Coverage**: the "Scope of Forestry Provisions" dimension is used to represent the breadth of coverage within each agreement, indicating the extent to which forestry-related topics are addressed. This dimension assessed the range of topics covered within the text of the provisions from general references to sustainable forestry management to specific commitments on illegal logging.
- **Depth**: in contrast, the Nature of Commitment, Intergovernmental Mechanisms, and Participation of Non-State Actors dimensions all represent the depth of each agreement's engagement. The "Nature of Commitment" dimension assessed the depth of forestry provisions by evaluating whether they permit flexibility, foster cooperation, or enhance sustainable trade in the forestry industry. The "Intergovernmental Mechanisms" dimension assessed the presence of institutional structures that enable ongoing dialogue and implementation of forestry provisions between parties. Finally, "Participation of Non-State Actors" captures the extent to which agreements involve civil society, private sector stakeholders, or other non-state actors in promoting sustainable forestry practices.

Each of the four dimensions addresses a unique facet of forestry provisions and given the absence of a clear hierarchical importance among these dimensions in existing literature, the study adopted an equal weighting scheme. This choice maintains balance and transparency, ensuring the FPDCI is straightforward to calculate and replicate (Hoekman, 1995). Future studies may explore alternative weighting strategies to further refine or challenge this approach.

Although the FPDCI is a new framework, some steps were taken to enhance its reliability and validity. First, the initial coding of forestry provisions was subjected to a generative AI cross-validation. Specifically, the full texts of the forestry provisions and the inductively derived forestry topics were inputted into a large-language model, which independently confirmed the topical groupings. While this approach is unconventional, it served as a preliminary check of coding consistency. For validity, the 21 topic areas identified align with Sustainable Development Goal 15 (Life on Land) as well as the United Nations Forum on Forestry's Global Objectives for Forestry. Finally, pilot scoring of a random subset of trade agreements confirmed the clarity and feasibility of the coding scheme.

3.3.2.1 Scope of Forestry Provisions (S)

This dimension of the index assessed the coverage (breadth) of the forestry provisions and involved the development of a finite list of forestry topics. This was carried out using an inductive coding technique, in which categories and classifications were generated directly from

the data. Inductive coding allows for themes and patterns to emerge directly from the data, reducing bias that may occur when pre-existing categories are imposed upon the data (Thomas, 2006). In the case of this study, a finite list of twenty-one topic areas was developed after a thorough analysis of all extracted forestry provisions. These topics are listed below:

1. **Biodiversity conservation and sustainable utilization**: Provisions that promote the conservation of biodiversity and the sustainable use of biological resources
2. **Community-based biodiversity management**: Provisions that support the involvement of local communities in managing and conserving biodiversity
3. **Sustainable Forest Management (SFM):** Provisions that encourage the use and promotion of sustainable forest management practices
4. **Forestry sector development:** Provisions that support the development of the forestry sector in a sustainable manner
5. **Trade of legally sourced forest products**: Provisions that ensure the international trade of forest products is sourced legally
6. **Deforestation mitigation**: Provisions specifically aimed at reducing deforestation
7. **Illegal logging reduction**: Provisions aimed at preventing and reducing illegal logging activities and the associated trade in illegal logging products
8. **Desertification combat strategies**: Provisions aimed at combatting desertification
9. **Forest fire prevention and management**: Provisions to reduce the risk of forest fires and enhance capabilities for effective fire management and response.
10. **Selective forest thinning practices**: Provisions that promote selective forest thinning practices to improve forest health and resilience.
11. **Integrated pest management in forests**: Provisions that encourage the use of integrated pest management methods in forests
12. **Climate change impacts on forest ecosystems**: Provisions that address and mitigate the effects of climate change on forest ecosystems
13. **Reducing Emissions from Deforestation and Forest Degradation (REDD+):** Provisions that support REDD+ initiatives
14. **Development of Agroforestry/Apiculture/Silvopasture systems**: Provisions that promote the development of agroforestry, apiculture, and silvopasture systems
15. **Forest governance and law enforcement enhancement**: Provisions that promote the strengthening of policies, institutions, and legal frameworks to improve governance and law enforcement in the forestry sector.

16. **Forest product certification and sustainability schemes**: Provisions that support certification and sustainability schemes for forest products
17. **Engagement with CITES for protection of endangered forest species**: Provisions that support enhanced collaboration with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
18. **Implementation of FLEGT Voluntary Partnership Agreements**: Provisions that support the implementation of Forest Law Enforcement, Governance and Trade (FLEGT) Voluntary Partnership Agreements
19. **Forests as carbon sinks**: Provisions that recognize the role of forests in sequestering carbon dioxide
20. **Comprehensive national forest monitoring**: Provisions that support the establishment and maintenance of robust national systems for monitoring forest health, coverage, and changes
21. **Indigenous community forest stewardship**: Provisions that support indigenous communities in sustainably managing their forest lands, recognizing their traditional knowledge and rights.

$$S = \frac{Number\ of\ Forestry\ Topics\ addressed}{Total\ Number\ of\ Forestry\ Topics\ (21)}$$

The forestry provisions from each trade agreement were then evaluated against this list. The final scope of provisions score for each agreement was calculated by dividing the number of topic areas covered in that agreement by the total number of forestry topics on the list.

3.3.2.2 Nature of commitment (C)

This dimension of the index assessed the depth of commitment of the forestry provisions and is based on the sustainable development provisions typology developed by Cordonier-Segger (2021). In this dimension, forestry provisions are assessed based on whether they permit flexibility, foster cooperation, and or enhance sustainable trade in the forestry industry. The three aspects of this dimension are:

1. **Exceptions provisions:** These provisions provide flexibility within trade agreements, allowing Parties to deviate from general economic rules (e.g., tariffs, quotas, or trade restrictions) to regulate or protect forests for sustainable development purposes. This

includes exceptions that permit governments to impose trade restrictions, provide subsidies, or enact other policies to support forest conservation, prevent deforestation, or promote sustainable forest management practices.

2. **Collaborative provisions:** These provisions establish guidelines and permissions for cooperation between Parties to address environmental issues related to forestry that could arise from trade agreements. Such provisions may promote joint efforts to combat illegal logging, restore degraded forest ecosystems, share knowledge on sustainable forest management, and promote capacity building.
3. **Enhancement provisions:** These provisions promote the liberalization of trade and investment in forestry-related sectors that support sustainable development. This includes encouraging the trade of sustainably sourced forest products, developing green technologies for forest management, and investing in industries that prioritize forest conservation, reforestation, or afforestation. Enhancement provisions align with international commitments to sustainable forestry, such as the Paris Agreement, and aim to facilitate environmentally friendly practices within the forestry sector.

$$C = \frac{Sum\ of\ Scores\ for\ Commitment\ Types}{Total\ Number\ of\ Commitment\ Types\ (3)}$$

The nature of commitment score for each agreement was calculated by assigning a score of one per provision type and then calculating a mean score for each agreement.

3.3.2.3 Intergovernmental Mechanisms (M)

This dimension, adopted from Velut et al (2022)'s study, assessed the types of operational mechanisms and structures through which forestry provisions are implemented.

These intergovernmental mechanisms are important because they facilitate cooperation and collaboration among countries, enabling effective implementation and enforcement of forestry provisions (Park & Lee, 2019; Velut et al., 2022). They provide the necessary frameworks for aligning regulations, building capacity, sharing information, and coordinating efforts to address transboundary forestry challenges such as illegal logging and deforestation (Pacheco, 2020; Pülzl & Rametsteiner, 2002). By fostering collective action, these mechanisms enhance the ability of countries to achieve shared sustainability objectives and promote sustainable forest management on a global scale (Roengtam & Agustiyara, 2022).

The list of intergovernmental mechanisms are as follows:

1. **Regulatory Cooperation**: This mechanism involves collaboration between countries to harmonize their regulatory frameworks and practices aimed at achieving shared sustainability objectives.
2. **Harmonization of Standards**: This mechanism entails creating and adopting uniform sustainability standards for forestry products across countries.
3. **Financial and/or Technical Assistance**: This refers to one country providing support to another to enhance their capability in managing natural resources sustainably.
4. **Capacity Building**: This mechanism focuses on strengthening the abilities of local communities and stakeholders through education, training, and provision of resources.
5. **Joint Scientific Cooperation**: This involves collaborative scientific research and data sharing to inform sustainable forestry practices.
6. **Information Exchange**: This mechanism involves the sharing of data, best practices, and knowledge between countries to enhance understanding and cooperation on sustainability in forestry management.

$$M = \frac{Sum\ of\ Scores\ for\ Mechanism\ Types}{Total\ Number\ of\ Mechanism\ Types\ (6)}$$

The intergovernmental mechanism score for each agreement was calculated by assigning a score of one per mechanism type and then calculating a mean score for each agreement.

3.3.2.4 Participation of non-state actors (P)

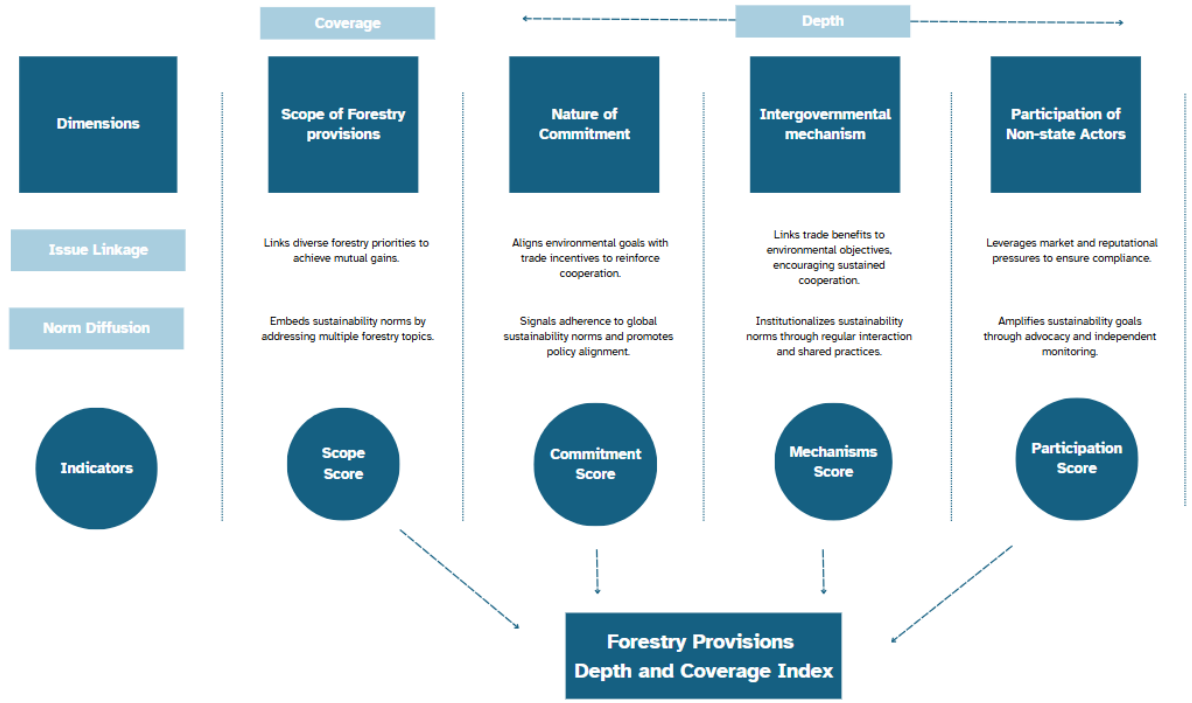
This is the final dimension of the index, and it assesses whether the governance of the forestry provisions allows for the participation of non-state actors. The importance of non-state actor participation has been highlighted as important for two reasons; monitoring and ensuring compliance with domestic environmental policies (Postnikov & Bastiaens, 2014), as well as the diffusion of sustainability norms across borders (Jinnah & Lindsay, 2016). This dimension was measured on a binary scale i.e., a score of 1 was assigned if the agreement allowed for participation of non-state actors, and a score of 0 if it did not.

$$P = \{\, 1\ if\ included, 0\ if\ not\ included \}$$

Therefore,

$$FPDCI = \frac{S + C + M + P}{4}$$

Figure 28 Forestry Provisions Depth and Coverage Index (FPDCI)



This figure illustrates the Forestry Provisions Depth and Coverage Index (FPDCI), which evaluates forestry provisions in trade agreements across four dimensions: scope of forestry provisions, nature of commitment, intergovernmental mechanisms, and participation of non-state actors.

3.3.3 Limitations

While this chapter performs a systematic analysis of forestry provisions in trade agreements using the Forestry Provisions Depth and Coverage Index (FPDCI), it is not without limitations.

First, as with other chapters in this thesis, the analysis is restricted to trade agreements available in English, which represented 89% of all trade agreements in force as of June 2023. While this coverage encompasses a significant majority, the exclusion of agreements negotiated in other languages may lead to an incomplete representation of forestry provisions. It is important to recognize that the minority of agreements outside this scope may contain valuable and contextually unique provisions.

Second, while the FPDCI provides a structured approach to evaluating the depth and coverage of forestry provisions, it does not capture the enforceability of these provisions. Assessing enforceability involves legal analysis and frameworks which are outside the scope of this study. Although enforceability is an important dimension of sustainability provisions, this chapter does not focus on quantifying it and instead recognizes that quantifying or empirically assessing enforceability is an area for future research.

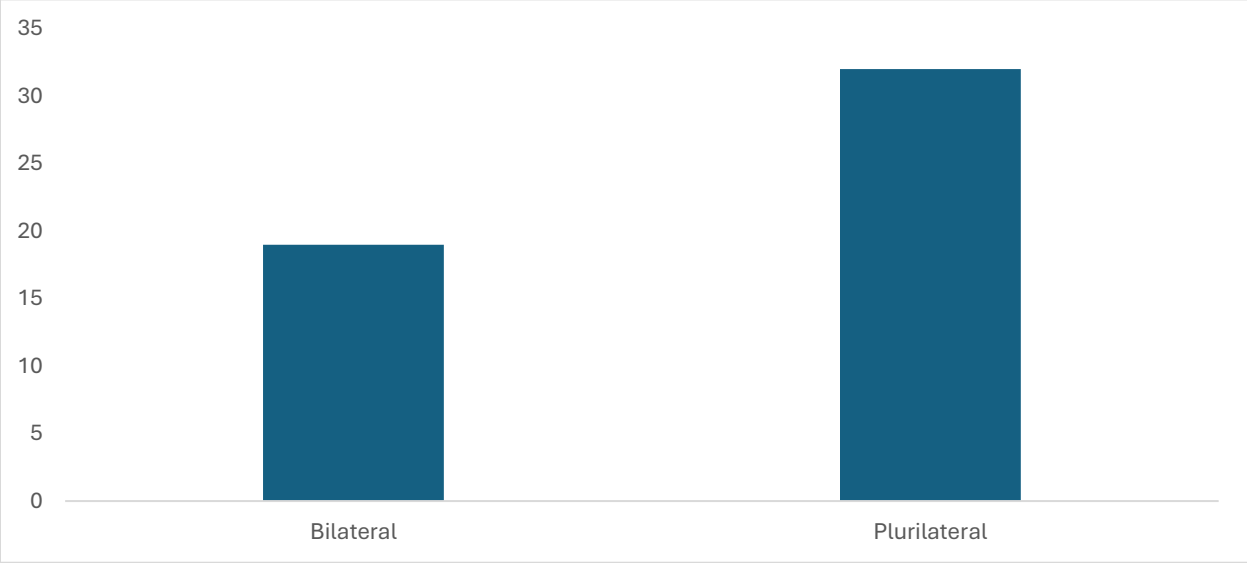
Third, the analysis centers exclusively on provisions explicitly targeting forestry. Broader provisions with indirect implications for forestry, such as those addressing climate change, are not included. While this focus enhances specificity, it may limit the breadth of the analysis by potentially excluding important complementary provisions.

3.4 Results and Discussion

Of the RTAs that include forestry provisions, 63% are plurilateral and 37% are bilateral, highlighting a clear tendency toward multi-country agreements. Plurilateral agreements like the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), EU-Colombia/Ecuador/Peru, the East African Community (EAC), and the Common Market for Eastern and Southern Africa (COMESA) bring together multiple nations to form multi-stakeholder, collective frameworks for forestry governance. Because these agreements span larger geographical regions and more diverse interests, they can more systematically address ecosystem-wide challenges and promote regional cooperation.

In contrast, bilateral agreements including the United States–Peru Trade Promotion Agreement, Peru–China Free Trade Agreement, and the United Kingdom–Australia Free Trade Agreement tend to be more narrowly tailored to the specific forestry priorities of their two signatories. This can enable more direct negotiation on issues such as illegal logging, enforcement mechanisms, and targeted capacity-building. For example, the U.S.–Peru TPA includes an annex specifically focused on forest sector governance, reflecting mutual priorities without having to accommodate a wider set of regional interests.

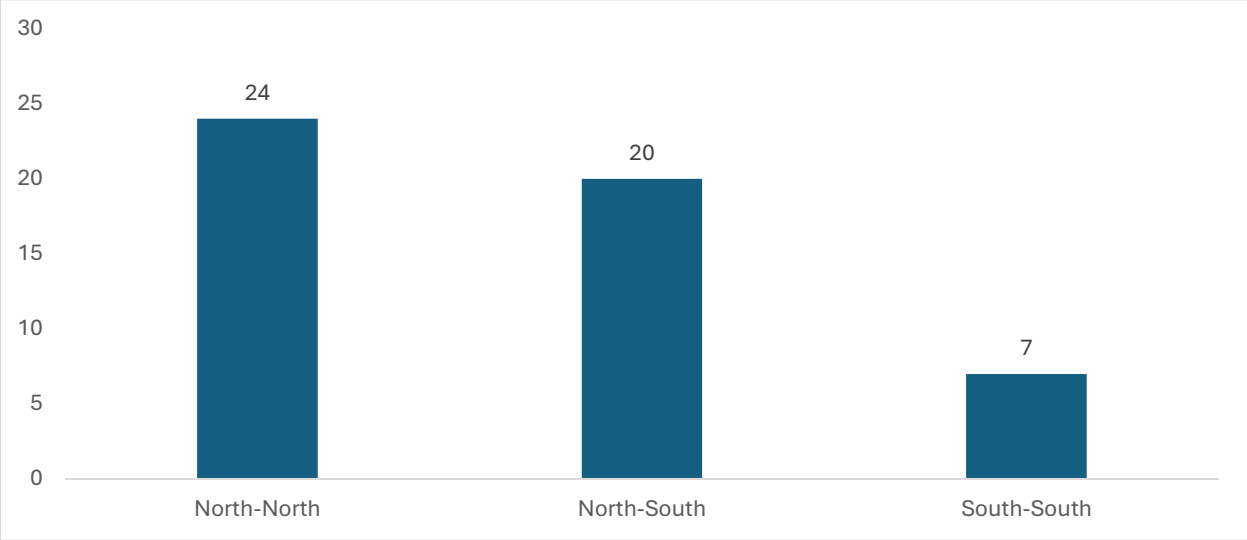
Figure 29 Distribution of Forestry Provisions (Bilateral vs Plurilateral)



This figure compares the distribution of forestry provisions between bilateral and plurilateral trade agreements.

Forestry provisions appear across a spectrum of economic contexts, with about half (47%) present in agreements classified as North-North agreements among developed nations like the CPTPP, EU-Canada/CETA, and various UK trade agreements. North-South agreements, which constitute 39% more explicitly balance development and environmental objectives; examples include the United States–Peru Trade Promotion Agreement and the EU-Colombia, Ecuador, and Peru Agreement, often incorporating capacity building and technology transfer mechanisms to align sustainability goals with economic incentives (Raslan, 2021). Meanwhile, South-South RTAs (14%), like COMESA and CARICOM, reveal a more regional approach to forestry challenges and generally weaker forestry provisions, highlighting the tension between prioritizing economic development and advancing robust sustainability commitments in lower-income contexts (Chen & Urata, 2021).

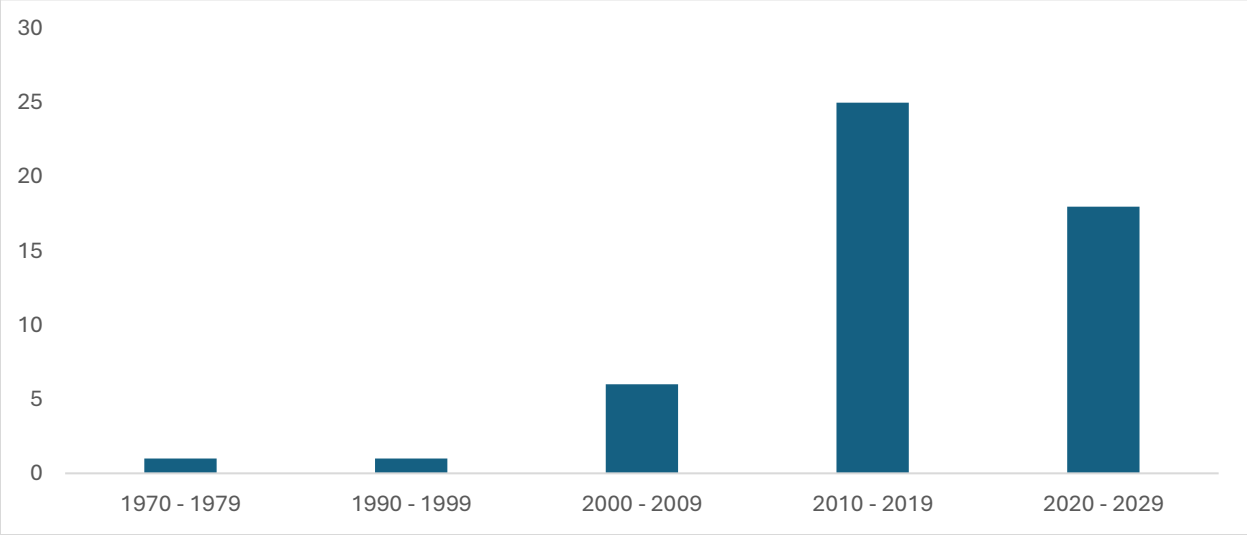
Figure 30 Distribution of Forestry Provisions (Global North vs Global South)



This figure illustrates the distribution of forestry provisions in trade agreements across three economic contexts: North-North (47%), North-South (39%), and South-South (14%).

From the 1970s into the early 2000s, relatively few trade agreements included explicit forestry provisions. Even by the early 2000s, the number of agreements with forestry provisions was modest; while some agreements began to acknowledge environmental issues more formally, their adoption remained sporadic, and forestry provisions were not yet widespread. A pronounced shift in the timeline emerged after 2010, with a marked increase in trade agreements that explicitly addressed forestry topics. Roughly 45% of forestry-inclusive agreements entered into force between 2010 and 2019, reflecting heightened global awareness of deforestation and illegal logging. The upward trend continues into the 2020–2029 period, as evidenced by newer agreements like the UK-Australia FTA and the USMCA.

Figure 31 Distribution of Forestry Provisions (1970 – 2029)



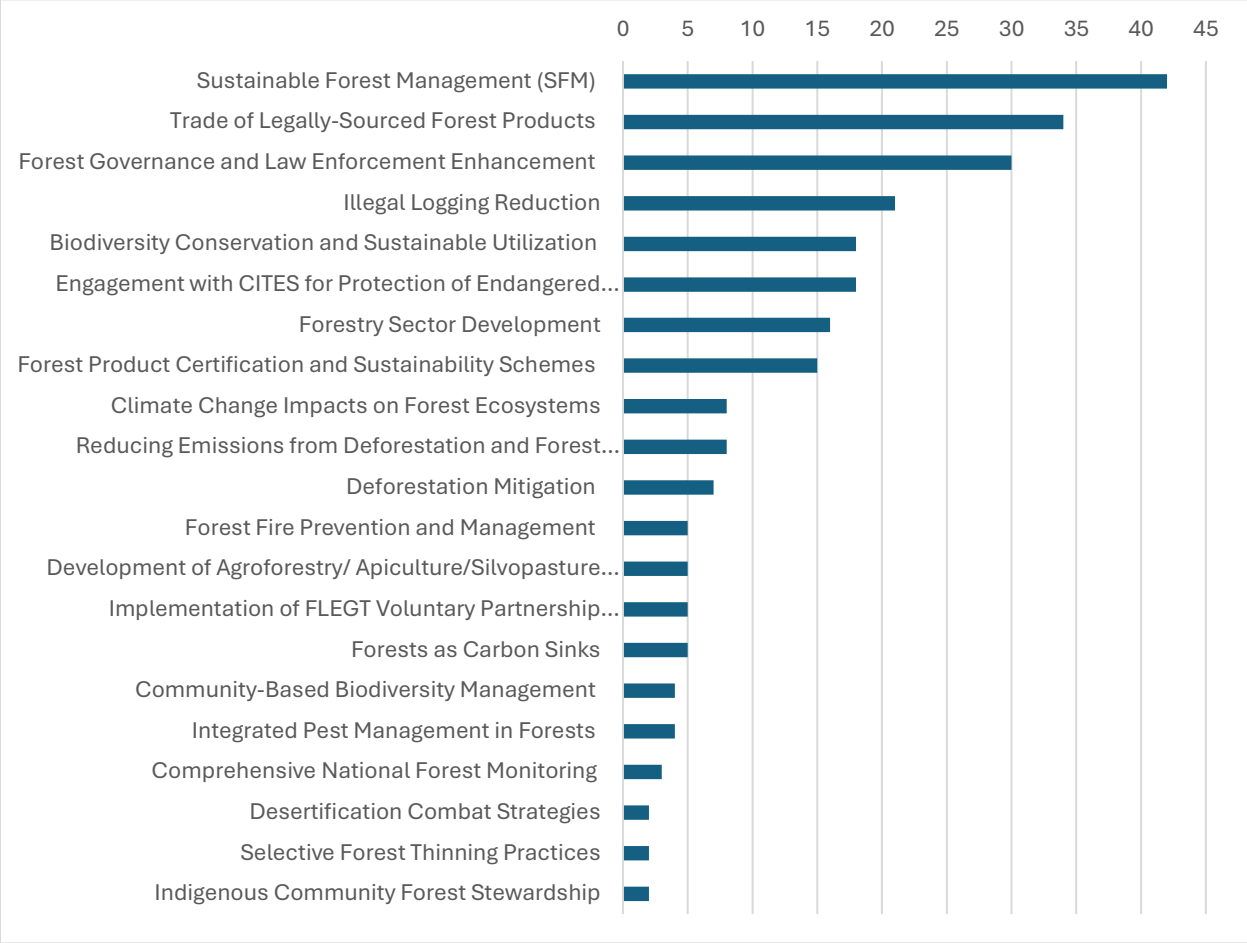
This figure shows the distribution of trade agreements with forestry provisions across five decades. The inclusion of forestry provisions was limited before 2010 but increased significantly from 2010 onwards

3.4.1 Scope of Forestry Provisions

Twenty-one distinct topic areas are mentioned within these provisions, ranging from the trade of legally sourced forestry products to the implementation of FLEGT voluntary partnerships.

Sustainable Forest Management (SFM) emerges as the most frequently referenced topic, appearing in 42 out of the 51 agreements analyzed. While all 42 agreements emphasize the importance of SFM, they differ in their specific approaches and priorities. The EU-Canada Agreement/ Comprehensive Economic and Trade Agreement (CETA) focuses on promoting trade and investment that contributes to the conservation and sustainable management of forests. Similarly, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the recognizes the importance of strengthening government capacity and institutional frameworks to promote sustainable forest management and wild fauna and flora conservation. The United States–Mexico–Canada Agreement (USMCA) emphasizes the importance of the conservation and sustainable management of forests for providing environmental economic, and social benefits for present and future generations. These variations reflect differing priorities among the agreements but collectively demonstrate a strong global commitment to sustainable forestry management practices.

Figure 32 Scope of Forestry Provisions



This figure categorizes the scope of forestry provisions across 21 distinct topic areas identified in trade agreements. Sustainable Forest Management (SFM) is the most frequently referenced topic, appearing in 42 agreements, followed by the trade of legally sourced forest products (36 agreements) and forest governance and law enforcement enhancement (34 agreements).

The trade of legally sourced forest products is the second most common topic, referenced in 36 agreements. By emphasizing the legality of forest products, these agreements contribute to protecting forest resources while fostering fair and sustainable trade practices. The United States–Peru Trade Promotion Agreement exemplifies a comprehensive approach with its annex focused on forest sector governance, emphasizing forest law enforcement and promoting trade in legal and sustainable forest products. The Korea-New Zealand Agreement, the EU-Vietnam Agreement and the EFTA-Philippines Agreement all commit to enhancing cooperation in promoting trade in legally harvested forest products. While all these agreements emphasize promoting the trade of legally sourced forest products, they vary in specificity but collectively support international efforts to combat illegal logging.

Forest governance and law enforcement are highlighted in 34 agreements, reflecting the recognition that robust institutional frameworks are essential for achieving sustainable forest management. Effective governance ensures the enforcement of laws and regulations that protect forests from illegal activities. The EU–Eastern and Southern Africa States Economic Partnership Agreement and the EU–Korea Agreement commits the parties to work on improving forest governance and enforcing forest laws through cooperation in multilateral processes, while the EFTA–Central America Free Trade Agreement links forest governance and law enforcement with climate goals by committing to work together to reduce greenhouse gas emissions from deforestation and forest degradation.

Illegal logging reduction is addressed in 32 agreements, reinforcing the global commitment to combating one of the most significant threats to forest ecosystems. The EU–Korea Free Trade Agreement, the Peru-Korea Agreement, the EU–Colombia, Ecuador, and Peru Free Trade Agreement, and the EU–Ukraine Association Agreement specifically focus on combating illegal logging through cooperation and conservation efforts. While all these agreements emphasize collaboration to reduce illegal logging and reference the need for conservation and sustainable forest management, they vary in scope and specificity. Some agreements, like the EU–Ukraine and EU–Colombia, Ecuador, and Peru agreements, include specific references to law enforcement alongside combating illegal logging, highlighting a focus on legal compliance and enforcement mechanisms. Others, such as the Peru–Korea agreement, emphasize broader international cooperation and alignment with conservation efforts without detailing specific enforcement measures.

Although Indigenous community forest stewardship is referenced in only three agreements, namely the EFTA-Indonesia, USMCA, and the UK-Australia Agreement, its inclusion is significant. Indigenous peoples play an important role in forest conservation, drawing on traditional knowledge and practices that have sustained forests for generations. Indigenous stewardship embodies a holistic approach to forest management, integrating ecological, cultural, and social dimensions in ways that modern forestry often overlooks. Their traditional knowledge systems include techniques for biodiversity conservation, sustainable harvesting, and land-use planning, all of which contribute to the resilience of forest ecosystems. The recognition of Indigenous stewardship in the above-mentioned agreements is an important acknowledgment of the critical role these communities play in global conservation efforts, and by codifying Indigenous contributions within their texts, these agreements provide a platform for advocating for Indigenous rights, equitable benefit-sharing, and the inclusion of marginalized voices in decision-making processes.

3.4.2 Nature of Commitment in Forestry Provisions

The Nature of Commitments dimension evaluates the depth of forestry-related commitments within trade agreements, concentrating on three key areas: Enhancement Provisions, Collaborative Provisions, and Exceptions Provisions.

Enhancement Provisions

Enhancement Provisions are designed to promote the liberalization of trade in sustainably sourced forestry products and to encourage investments in clean technologies that support sustainable forest management (Cordonier-Segger,2021). Of the 51 agreements analyzed, 38 incorporate Enhancement Provisions, indicating a widespread commitment among countries to align trade practices with sustainability goals. The widespread adoption of these provisions reflects an evolving understanding that trade and sustainable development are not only compatible but can actively reinforce one another.

For instance, most of the EFTA agreements analyzed include provisions that promote the trade of certified timber and support the development of technologies for sustainable forest management. These provisions often facilitate the establishment of traceable supply chains that ensure timber legality and sustainability, fostering both environmental integrity and consumer confidence. Similarly, the EU-Singapore and EU-Vietnam Agreements emphasize the importance of promoting sustainable trade in forest products through certification systems and technical cooperation within the forestry sector. Certification schemes, such as those endorsed by the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC), provide a practical mechanism for ensuring that forestry products meet rigorous environmental and social standards (Chen et al., 2020; Gavrilut et al., 2016).

By creating market-driven incentives, these provisions encourage the sustainable use of forest resources while simultaneously aligning trade policies with the broader objectives of global sustainable forestry management (Avesani et al., 2024). Additionally, investments in clean technologies as a result of Enhancement Provisions play a transformative role in advancing sustainable forestry management. The integration of clean technologies into forestry management also supports the transition to a low-carbon economy.

Despite their potential, the effectiveness of Enhancement Provisions is often constrained by challenges related to implementation and enforcement (Pacheco., 2020). Many trade agreements lack detailed monitoring mechanisms or sufficient technical support for countries with limited resources to adopt clean technologies or establish certification systems (Chen et al.,

2020). Addressing these gaps requires the development of robust compliance frameworks, increased funding for capacity-building initiatives, and greater international cooperation to ensure that the benefits of these provisions are equitably distributed.

Collaborative Provisions

Collaborative Provisions are the most commonly included type of commitment, present in all 51 agreements analyzed. These provisions are important for fostering cooperation between the Parties on issues such as illegal logging, forest conservation, and sustainable forest management (Avesani et al., 2024; Cordonier-Segger, 2021). Their inclusion in all the analyzed agreements emphasizes the global recognition that joint efforts and capacity-building are essential to addressing the cross-border challenges of the forestry sector.

The EU-Central America Association Agreement, the EU-SADC, EU-Colombia -Ecuador-Peru Agreements among others all outlines cooperative measures that facilitate knowledge sharing and capacity building to improve forest management and law enforcement across member countries. These agreements also support joint research initiatives and the development of regional strategies to combat deforestation and promote sustainable forestry practices. By pooling resources and expertise, the member countries are better equipped to address common forestry challenges and implement effective solutions tailored to their regional contexts.

Although its forestry provisions have been described as highly prescriptive (Jinnah & Lindsay, 2016), the US-Peru TPA also contains collaboration provisions focused on combating illegal logging and strengthening forest governance. This agreement establishes a framework for joint action, ensuring that timber exports comply with legal requirements, thereby preventing the trade of illegally sourced forest products. The agreement also provides for capacity-building initiatives, such as training programs for forest officials and support for technological advancements in timber tracking and enforcement systems. These measures enhance the ability of both countries to meet shared sustainability goals while maintaining fair and transparent trade practices.

The emphasis on collaboration in these agreements highlights the importance of shared responsibility and coordinated approaches to addressing global forestry issues (Brandi et al., 2020). Collaborative Provisions go beyond mere commitments to engage in dialogue; they establish operational frameworks that include joint monitoring systems, information-sharing platforms, and institutional mechanisms for regular consultations and dispute resolution

(Cordonier-Segger, 2021). Such provisions create a foundation for sustained cooperation, fostering trust and mutual accountability among Parties.

Furthermore, the inclusion of Collaborative Provisions reflects an acknowledgment of the interconnected nature of forestry challenges. Issues such as deforestation, illegal logging, and biodiversity loss are rarely confined within national borders and often require transnational solutions. By working together, countries can address these challenges more effectively, leveraging collective knowledge and resources to achieve common objectives.

Exceptions Provisions

Exceptions Provisions, which allow Parties to deviate from general trade rules for the protection of forests (Cordonier-Segger, 2021), are the least common type of commitment. In the analysis, only one agreement, the US-Peru Trade Promotion Agreement, includes an explicit Exceptions Provision. This provision grants Peru the flexibility to implement special measures, including trade restrictions, to protect its forests and enforce sustainable forest management practices.

The inclusion of this provision reflects a recognition of the need for flexibility in balancing economic and environmental priorities. By permitting trade restrictions under certain conditions, the provision ensures that Peru can meet its environmental protection commitments without being constrained by the broader economic liberalization aspects of the agreement. For instance, this flexibility enables Peru to enforce its Forest and Wildlife Law by restricting the export of timber that does not meet legal verification standards. Such measures are important for addressing illegal logging and preserving biodiversity, demonstrating how trade agreements can accommodate environmental imperatives.

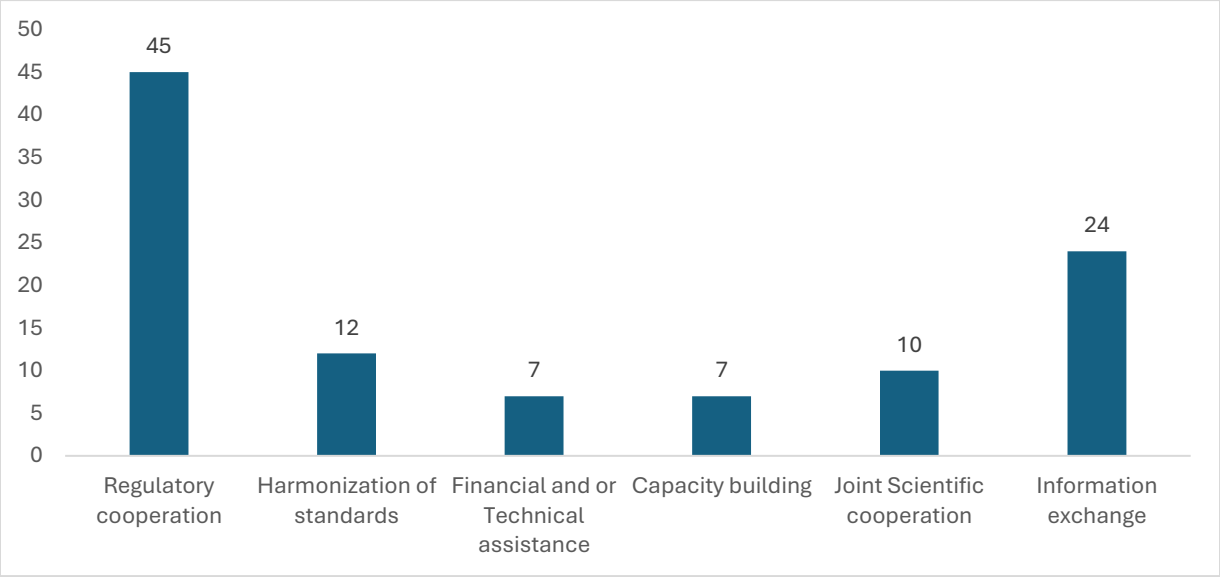
Despite its significance, the rarity of such provisions suggests that many trade agreements may lack the necessary flexibility to address their domestic forestry challenges. This omission can create tensions between trade liberalization goals and the need for effective environmental governance, particularly in countries with high rates of deforestation or limited enforcement capacity. Without Exceptions Provisions, countries may face pressure to prioritize economic growth over ecological sustainability, potentially undermining global forest conservation efforts.

3.4.3 Intergovernmental Mechanisms in Forestry Provisions

Regulatory cooperation, which focuses on harmonizing forestry regulations to achieve shared sustainability goals, is the most frequently cited mechanism, appearing 45 times across the analyzed agreements. This prevalence highlights its importance in aligning the policies of trading partners, particularly when discrepancies in national regulations pose barriers to

effective implementation. The high frequency suggests that many countries recognize the need for coordinated regulatory frameworks as a foundation for sustainable forestry management. However, while its inclusion is widespread, the depth and specificity of such provisions vary, indicating that not all agreements provide the same level of detail in operationalizing this cooperation. For instance, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) includes provisions that specify regulatory cooperation in the form of joint monitoring and reporting, ensuring that parties remain accountable. In contrast, other agreements merely mention cooperation without outlining specific actions, which may limit their effectiveness.

Figure 33 Intergovernmental mechanisms



This figure highlights the inclusion of intergovernmental mechanisms in forestry provisions across trade agreements. Regulatory cooperation is the most frequently cited mechanism, appearing in 45 agreements, followed by information exchange (24 agreements) and harmonization of standards (12 agreements).

Information exchange is the second most common mechanism, with 24 mentions. This mechanism supports the continuous flow of data, knowledge, and best practices among countries, enhancing the parties' ability to cooperate effectively. Its prominence indicates an awareness that dynamic, real-time information is crucial for adapting forestry policies to emerging challenges. However, the effectiveness of information exchange depends heavily on the infrastructure and platforms available to facilitate this exchange. The CPTPP's provision for "joint research and information exchange" exemplifies a comprehensive approach, while other agreements merely encourage information sharing without specifying how it will be operationalized, which may limit their impact.

Harmonization of standards is mentioned 12 times, demonstrating a moderate level of inclusion. This mechanism focuses on creating uniform sustainability criteria for forestry products across countries, facilitating consistent enforcement and reducing market barriers. Its presence is particularly important for agreements involving regions with existing disparities in forestry regulations, as it helps create a level playing field. However, the relatively lower frequency compared to regulatory cooperation suggests that while countries may be open to regulatory alignment, achieving agreement on specific standards remains more challenging. This gap points to the need for stronger international frameworks or incentives that encourage countries to adopt and implement harmonized standards, which are important for ensuring the effectiveness of forestry-related sustainability provisions.

Joint scientific cooperation, involving collaborative research and data sharing, appears in 10 instances. This mechanism is vital for ensuring that sustainability efforts are informed by the latest scientific knowledge and best practices. The data shows that agreements involving more developed regions, such as those within the EU, are more likely to include joint scientific cooperation, reflecting their emphasis on evidence-based policymaking. However, its limited inclusion in other agreements suggests that opportunities for scientific collaboration remain underutilized, especially in agreements with less developed countries. This gap highlights the need for greater emphasis on integrating scientific expertise into international forestry cooperation, as it is essential for adapting policies to changing environmental conditions and technological advances.

Financial and technical assistance is included in 7 instances, mostly in agreements involving developing countries. This mechanism is important as it provides the necessary resources and expertise for countries with limited capacities to implement sustainable forestry management practices. The presence of this mechanism is a positive indication of the recognition that capacity disparities must be addressed to ensure effective implementation. For example, the EU-Colombia-Ecuador-Peru agreement explicitly commits to offering technical assistance, acknowledging the role of resource transfer in bridging the implementation gap. However, the limited frequency highlights an inconsistency; while financial and technical support is acknowledged as essential, it is not universally provided, which can leave some countries unable to fully operationalize forestry provisions.

Capacity building, which focuses on strengthening the abilities of local communities and stakeholders, is noted in only 7 agreements. This mechanism’s low frequency suggests a critical gap, as capacity building is fundamental to ensuring long-term sustainability and the

empowerment of local actors. Agreements that do include capacity-building components, such as the EU's agreements with developing countries, emphasize training and education as key elements. However, the limited presence of this mechanism indicates that many agreements overlook the importance of investing in local capacity. This omission could undermine the sustainability of forestry practices in the long term, as local communities play a crucial role in implementing and monitoring forestry provisions.

While some mechanisms, such as regulatory cooperation and information exchange, are frequently included, others like capacity building and technical assistance are less commonly incorporated. This uneven distribution suggests that while there is recognition of the need for coordinated efforts, the practicalities of implementing these efforts, particularly in resource-limited contexts, are often insufficiently addressed. Agreements involving the European Union tend to have more comprehensive coverage, indicating a more structured approach to integrating sustainability provisions. In contrast, agreements involving less developed countries or those with a primary focus on economic cooperation show limited engagement with these mechanisms, which could compromise their effectiveness.

3.4.4 Participation of Non-State Actors in Forestry Provisions

The inclusion of non-state actors in the implementation and monitoring of forestry provisions within trade agreements is an important element for ensuring broader participation and accountability. Non-state actors, including NGOs, civil society organizations, and the private sector, can play central roles in advocating for sustainable practices, monitoring compliance, and contributing to capacity building.

The analysis of these forestry provisions reveals a significant gap in the participation of non-state actors across the majority of trade agreements. Out of the 51 agreements analyzed, only a small fraction including the CARICOM, United States-Peru, and EU-Colombia, Ecuador, and Peru agreements explicitly provide for the involvement of non-state actors in the implementation of forestry provisions. These agreements received a score of 1, indicating that they include mechanisms or provisions that allow or even encourage the participation of non-state actors in the implementation or oversight of forestry-related commitments.

In the agreements where non-state actor participation is included, the provisions often emphasize the role of civil society in monitoring and consultation processes. For instance, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the EU-Colombia-Ecuador-Peru agreement includes a provision that promotes transparency and enhances public participation in the management of forest resources for timber production.

These provisions highlight the recognition of the importance of involving diverse stakeholders in achieving sustainable forestry goals.

Most of the analysed agreements, received a score of 0, as they do not explicitly provide for the participation of non-state actors in forestry provisions. This exclusion is particularly notable in agreements involving regions or countries where civil society engagement in environmental governance is less established or where the focus of the agreement is predominantly on economic cooperation rather than environmental sustainability. The limited inclusion of non-state actors in these agreements has significant implications for the governance and implementation of forestry-related sustainability provisions. Non-state actors often bring valuable expertise, local knowledge, and independent oversight to the table, all of which are important for ensuring that commitments are not only implemented but are done in a way that is socially equitable and environmentally effective. The absence of such participation could lead to a lack of accountability and diminished public trust in the sustainability provisions included in these agreements.

3.4.5 Index Scores

The variability in index scores, ranging from a high of 0.8452 (United States–Peru) to a low of 0.0417 (India–United Arab Emirates), reflects the differing levels of engagement with forestry provisions across these agreements.

Table 3 Results of Forestry Provisions Depth and Coverage Index

RTA Name	**Date**	**Scope of Provisions**	**Nature of Commitment**	**Intergovernmental Mechanisms**	**Participation of Non state Actors**	**Score**
United States - Peru	February 1, 2009	0.3810	1.0000	1.0000	1	0.8452
Peru - China	March 1, 2010	0.3333	0.6667	0.6667	1	0.6667
Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)	December 30, 2018	0.1429	0.6667	0.6667	1	0.6191

EU - Colombia, Ecuador and Peru	March 1, 2013	0.2381	0.6667	0.5000	1	0.6012
United Kingdom - New Zealand	May 31, 2023	0.3810	0.6667	0.3333	1	0.5952
Caribbean Community and Common Market (CARICOM)	August 1, 1973	0.3333	0.6667	0.3333	1	0.5833
United Kingdom - Iceland, Liechtenstein and Norway	December 1, 2021	0.3810	0.6667	0.6667	0	0.4286
EU - Armenia	June 1, 2018	0.3333	0.6667	0.6667	0	0.4167
EU - Moldova, Republic of	September 1, 2014	0.4286	0.6667	0.5000	0	0.3988
United Kingdom - Moldova, Republic of	January 1, 2021	0.4286	0.6667	0.5000	0	0.3988

This table presents the index scores for highest scoring trade agreements.

United States–Peru, CPTPP, and EU-Colombia, Ecuador, and Peru rank highly on the index due to their comprehensive approach to forestry provisions. These agreements share several characteristics that likely contribute to their strong performance in the index.

Many high-scoring RTAs involve countries where the forestry industry plays a significant economic role. For example, Peru is home to a large portion of the Amazon rainforest and has substantial trade in timber and forest products. The United States–Peru agreement includes specific, enforceable provisions to combat illegal logging and promote sustainable forest management, driven by both environmental concerns and trade considerations. Similarly, the CPTPP involves countries like Canada and New Zealand, which have significant forestry sectors and prioritize sustainable practices to maintain access to global markets.

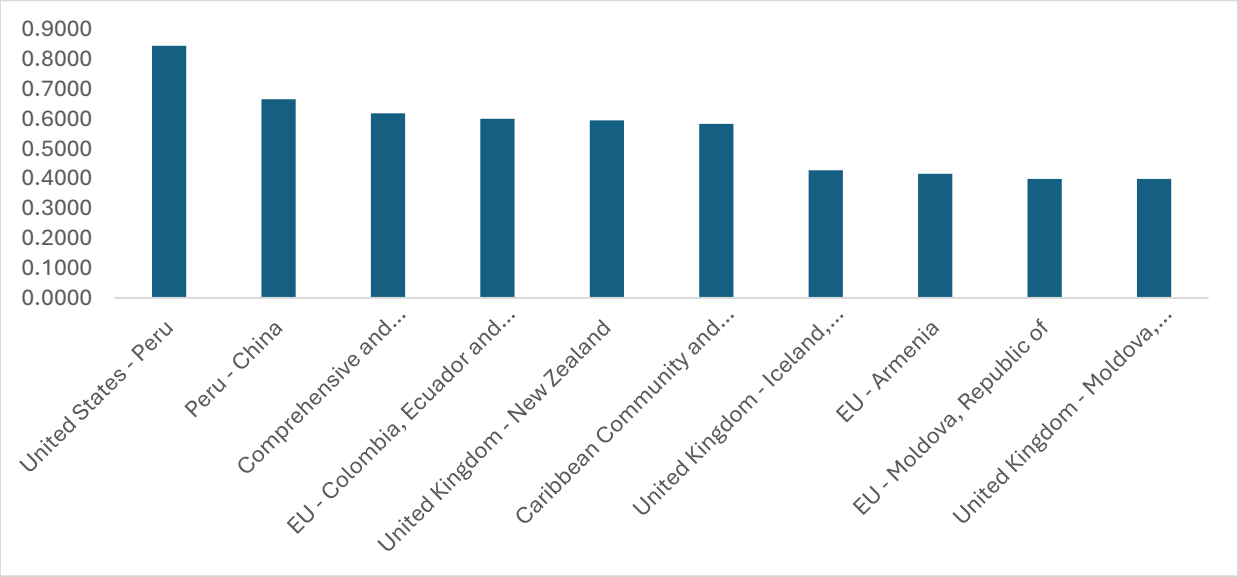
Another commonality among high-scoring agreements is the involvement of countries with established environmental governance frameworks. The EU is a pioneer in embedding sustainability into trade agreements, and its agreements typically include specific sustainability provisions, robust intergovernmental mechanisms, and the participation of non-state actors. EU

agreements like the EU-Colombia, Ecuador, and Peru and EU-Japan, prioritize comprehensive forest governance, making them potentially more effective in promoting the principles of sustainable forestry.

The political landscape in the EU plays a key role in ensuring these strong provisions, as the EU consistently acts as a "norm entrepreneur"(Ha, 2018; Jinnah & Lindsay, 2016), promoting global environmental standards through its trade agreements. Public opinion in the EU strongly favors sustainability, which pushes policymakers to embed comprehensive environmental protections, including forestry provisions, into RTAs. Additionally, the EU's well-established governance mechanisms ensure accountability and enforcement of these provisions.

The political commitment of countries like the US to addressing illegal logging and deforestation, particularly in agreements like the US-Peru FTA, highlights how strong forestry provisions are often a reflection of both domestic political pressure and international obligations. The CPTPP, for example, reflects the influence of both domestic environmental movements (e.g., in New Zealand) and the desire to maintain a positive global reputation by adhering to sustainability standards.

Figure 34 High-scoring Agreements



This figure shows the highest-scoring trade agreements based on the Forestry Provisions Depth and Coverage Index (FPDCI). The United States–Peru agreement ranks the highest, followed by agreements like Peru–China, CPTPP, and EU-Colombia, Ecuador, and Peru. These agreements excel due to their comprehensive forestry provisions and robust mechanisms for promoting sustainable forestry practices.

On the other end of the spectrum, India–United Arab Emirates and Indonesia- Korea, Republic of rank low on the index. These agreements tend to share several characteristics that explain their limited attention to forestry sustainability:

One of the primary reasons for the low ranking of these RTAs is that forestry products are not a significant component of trade between the countries involved. For example, the United Arab Emirates does not have major timber industries, and thus forestry provisions are not prioritized in their trade negotiations. As a result, these agreements often lack comprehensive forestry provisions or rely on non-binding commitments, resulting in lower scores across the four dimensions.

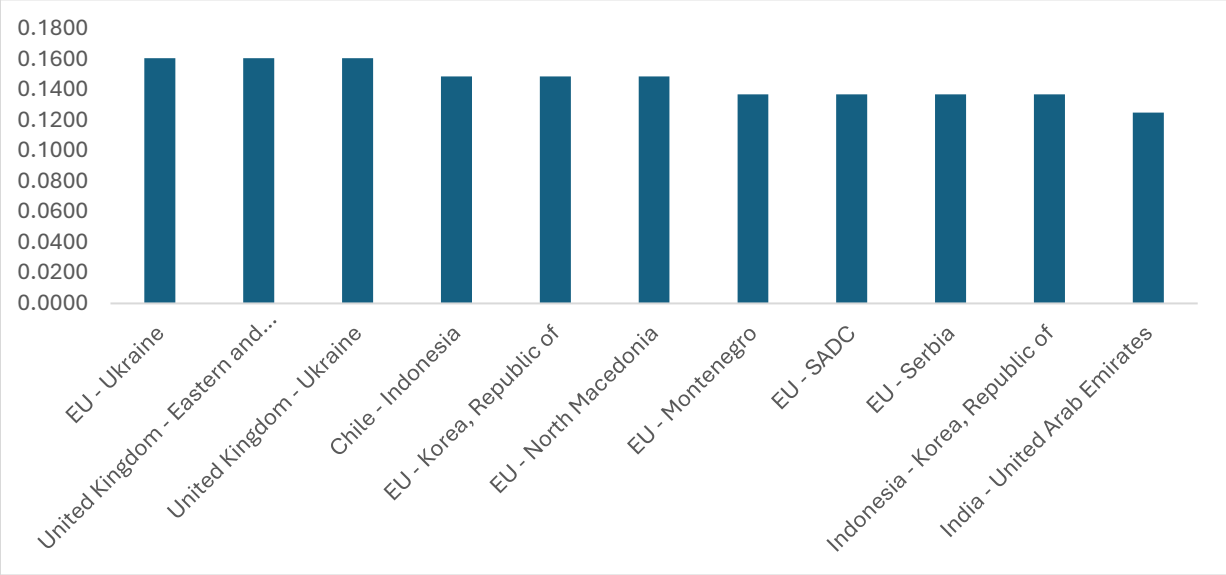
In many low-scoring agreements, particularly those involving developing or emerging economies, the focus tends to be more on economic growth than on sustainability. These countries may face pressing economic challenges that make it difficult to prioritize long-term sustainability over immediate trade and economic development goals.

In regions like India and the UAE, political and economic constraints play a key role in deprioritizing forestry sustainability. These agreements often reflect the short-term economic goals of emerging markets, where the primary focus is on fostering economic growth and trade relations, rather than committing to strict environmental standards. This trade-off between economic development and sustainability is particularly evident in South-South agreements, where environmental provisions are often secondary to economic imperatives.

Low-scoring RTAs also tend to involve countries where environmental governance is weaker or less developed. Without the political will or institutional capacity to enforce sustainability provisions, these agreements often include only vague or aspirational language.

Weak regional environmental governance frameworks in areas like South Asia and the Middle East contribute to the lower rankings. These regions often lack the political cohesion or institutional frameworks seen in higher ranking agreements. Consequently, forestry provisions in these agreements remain weak, as there are no strong regional governance body to push for or enforce higher environmental standards.

Figure 35 Low-scoring Agreements



This figure highlights the lowest-scoring trade agreements based on the Forestry Provisions Depth and Coverage Index (FPDCI).

3.4.6 Regional approaches to Forestry Provisions

Forestry provisions in trade agreements demonstrate some regional differences, reflecting varying environmental, economic, and political priorities. These provisions range from standardized templates with minimal flexibility to highly adaptive commitments addressing specific partner-country challenges.

EFTA agreements primarily follow a standardized, template-based approach, emphasizing sustainable forest management with little adaptation to partner-country contexts. These provisions typically promote legality assurance systems for timber and combat illegal logging, but they show limited evolution over time. A rare exception is the EFTA-Indonesia Agreement, which includes innovative commitments targeting deforestation and peatland conservation. For example, this agreement integrates measures to regulate the vegetable oils sector and protect critical ecosystems, representing a notable departure from EFTA's otherwise uniform framework.

In contrast, EU agreements exhibit flexibility and a strong commitment to sustainability, often tailoring provisions to address specific environmental challenges. Over time, EU agreements have evolved to include broader goals such as biodiversity conservation and climate change mitigation. The EU-Cameroon Agreement, for instance, emphasizes timber traceability and supports regional governance frameworks like the COMIFAC Treaty. Similarly, the EU-Canada

Agreement incorporates provisions for biodiversity protection alongside sustainable forest management, reflecting the EU's leadership in integrating trade and sustainability.

Following Brexit, UK agreements have largely mirrored EU templates, focusing on cooperative frameworks and sustainable forest management. The UK-Georgia Agreement reflects this alignment, promoting trade in legal and sustainably managed timber and addressing illegal logging. While current agreements remain closely aligned with EU models, the UK's independent trade policy may eventually diverge (Savaresi & Fontanelli, 2020), creating opportunities for unique approaches to forestry provisions.

The US adopts an enforcement-heavy strategy, prioritizing compliance through detailed monitoring mechanisms and penalties for non-compliance. The US-Peru Trade Promotion Agreement exemplifies this approach with its prescriptive annex on forest sector governance, which includes stringent measures to combat illegal logging and enforce accountability. This contrasts with the EU's cooperative focus, highlighting the diversity in regional strategies for addressing sustainability.

Korea's approach is characterized by bilateral flexibility, adapting forestry provisions to the specific needs of partner countries. For instance, the Korea-Indonesia Agreement emphasizes combating deforestation and promoting sustainable timber industries, showcasing Korea's ability to respond dynamically to environmental challenges. This flexibility ensures that Korea's agreements address both global and regional priorities effectively.

Regions like COMESA and CARICOM typically include generalized forestry provisions with limited specificity or enforceability. These provisions often focus on sustainable forest management within a broader sustainable development framework. For example, the CARICOM Agreement promotes public-private partnerships and integrates forest development into rural communities but lacks detailed commitments or enforcement mechanisms.

These regional approaches illustrate the varied strategies for incorporating forestry provisions into trade agreements. While some regions, such as the EU, prioritize adaptability and evolution, others, like EFTA and COMESA, favor standardized or generalized frameworks. This diversity underscores the need for tailored strategies to advance global sustainability goals.

Table 4 Comparative Analysis of Regional Approaches to Forestry Provisions

Region/State	Key Characteristics	Evolution Over Time	Approach
EFTA	Standardized provisions; minimal adaptation to partner countries.	Little evolution: most agreements replicate older templates.	Voluntary, non-enforcement-based provisions.
EU	Flexible, tailored provisions addressing partner-specific challenges	More recent agreements show evolution of provisions	Cooperative frameworks with capacity-building and joint committees.
UK	Influenced by EU agreements; emphasizes cooperation and technical support.	Potential for future divergence as independent trade policy develops.	Cooperative frameworks similar to EU.
US	Enforcement-oriented provisions; detailed compliance mechanisms and penalties.	Refined enforcement mechanisms, consistent focus on compliance.	Enforcement-heavy, with penalties and sanctions for non-compliance.
Korea	Flexible, bilateral provisions tailored to partner-specific challenges.	Evolving focus reflects global concerns, especially in Southeast Asia.	Cooperative, addressing partner-specific

3.5 Conclusion and policy recommendations

In this chapter, I systematically examined sustainability provisions targeting the forestry industry within trade agreements and introduced the Forestry Provisions Depth and Coverage Index (FPDCI) as a novel tool to evaluate their scope and depth. By analyzing 320 trade agreements and identifying 51 with substantive forestry provisions, this study revealed important patterns in the design of these provisions:

- Trade agreements that address a wide range of forestry-related topics exhibit a greater alignment between environmental and economic priorities. The inclusion of diverse forestry topics enhances agreements' ability to tackle multifaceted forestry challenges.

- The presence of intergovernmental mechanisms enhances the implementation of forestry provisions. These mechanisms facilitate ongoing dialogue, accountability, and knowledge sharing among trade partners.
- Non-state actor participation, including NGOs, industry groups, and indigenous communities, emerged as an important but underutilized element in forestry provisions.

This study also makes important contributions to theory and knowledge:

- By integrating issue linkage theory and norm diffusion theory, this study advances understanding of the mechanisms through which sustainability norms are embedded in trade agreements. The findings demonstrate how trade agreements serve as platforms for diffusing sustainable forestry norms across borders.
- The FPDCI represents a methodological innovation, providing a replicable, multi-dimensional framework to evaluate forestry provisions in trade agreements. By combining qualitative content analysis with quantitative scoring, the FPDCI offers a systematic approach to assess both the depth and breadth of forestry commitments.
- This study delivers one of the most comprehensive empirical analyses of forestry provisions in trade agreements to date, covering 320 agreements and systematically analyzing 51 with substantive provisions. The findings contribute to a deeper understanding of regional and global trends in sustainable forestry within international trade policy frameworks.
- The findings offer actionable insights for policymakers and negotiators to strengthen the effectiveness of forestry provisions in trade agreements. First, enhancing institutional mechanisms, such as robust frameworks for cooperation, accountability, and dispute resolution, can facilitate the operationalization of these commitments. Second, integrating non-state actors, including NGOs, industry stakeholders, and indigenous and local communities, into the design and implementation processes can bridge gaps between international commitments and on-the-ground realities. Finally, adopting a comprehensive scope that addresses diverse forestry challenges ensures that provisions remain adaptable and responsive to evolving sustainable development priorities.

Looking ahead, Chapter 4 builds on this analysis by evaluating the impacts of cooperative activities stemming from selected trade agreements among the 51 analysed in this chapter.

Using case studies of the US-Peru TPA, the USMCA, and the EU-Cameroon EPA, Chapter 4 examines how cooperative activities translate high-level forestry provisions into measurable impact.

Chapter 4
Forestry-Related Cooperative Activities of Trade Agreements: A Comparative Analysis

4.1 Introduction

In this chapter, I examine forestry-related cooperative activities stemming from trade agreements. This inquiry is guided by the question: "Do forestry-related cooperative activities arising from trade agreements generate measurable results?" By framing the analysis around the concept of "results," I distinguish between three interconnected levels: outputs, outcomes, and impacts. These distinctions are important for evaluating the full range of effects stemming from cooperative activities, from their immediate implementation to their broader, long-term consequences.

Cooperative activities are analyzed as the practical means through which intergovernmental mechanisms translate high-level forestry provisions into actionable outcomes (Hradilová & Svoboda, 2018). While categorized under the intergovernmental mechanisms dimension of the Forestry Provisions Depth and Coverage Index (FPDCI) developed in Chapter 3, these activities represent the operationalized components that directly engage stakeholders and produce measurable results. Examples of these activities include, but are not limited to, capacity-building workshops, joint research programs, and community-assisted initiatives (Carpentier, 2006; Palmieri et al., 2024). The effectiveness of cooperative activities often hinges on the governance capacity and support provided by intergovernmental mechanisms, which shape their design and implementation (Mauerhofer, 2019).

A growing body of research highlights the effectiveness of cooperative activities that prioritize collaboration over trade sanctions (Adanma & Ogunbiyi, 2024; Benchekroun & Long, 2012; Cordonier Segger, 2021; Yoo & Kim, 2016). These studies suggest that cooperative activities foster trust and reduce political resistance, especially in contexts where punitive enforcement measures may face significant barriers. Morin et al. (2018) observe that trade agreements establishing committees or working groups to oversee forestry-related cooperation have shown promise in enhancing transparency, strengthening institutional capacity, and aligning national policies with international sustainability norms.

Despite this progress, significant challenges persist. Countries with strong economic stakes in forestry exports may resist stringent forestry provisions (Heyl et al., 2021), while states with limited resources often struggle to implement and monitor cooperative activities effectively (Hansen, 2022). Additionally, variations in income levels, institutional capacities, and ecological

priorities among trading partners complicate efforts to develop uniform frameworks (Hansen et al., 2018; Overdevest & Zeitlin, 2018). Even well-designed forestry provisions risk becoming merely symbolic without adequate funding, technical support, or capacity-building measures (Hansen et al., 2018; Richards et al., 2003). These challenges emphasize the need for frameworks that address not only the design of cooperative activities but also their operationalization and outcomes.

Existing research highlights the potential of cooperative activities to address illegal logging, promote sustainable forestry management, and protect biodiversity (Morin, Chaudhuri, et al., 2018; Yoo & Kim, 2016). However, evaluations of these activities often focus on their design and immediate outputs, leaving questions about their outcomes and long-term impacts underexplored. Additionally, there is a lack of systematic frameworks that link the operationalization of cooperative activities to measurable results, particularly across diverse institutional and economic contexts.

In this chapter, I aim to address these gaps by applying a results-based conceptual model to assess forestry-related cooperative activities. The model distinguishes between three levels:

- **Outputs**: Immediate and tangible results of cooperative activities, such as the development of governance tools, training sessions, or conservation projects.
- **Outcomes**: Intermediate changes resulting from these outputs, including enhanced enforcement capacity, improved stakeholder participation, and the adoption of sustainable forestry certifications.
- **Impacts**: Broader, long-term effects, such as reductions in deforestation, improved biodiversity conservation, and socio-economic benefits from sustainable forestry management practices.

By linking cooperative activities to these three levels, I evaluate their effectiveness in addressing complex forestry challenges while also demonstrating how governance structures and institutional arrangements influence their success. Building on Chapters 2 and 3, this analysis bridges the gap between the design of forestry provisions and their practical implementation, highlighting the important role of cooperative activities in facilitating measurable outcomes.

To achieve this, the chapter focuses on three trade agreements: the United States-Mexico-Canada Agreement (USMCA), the United States-Peru Trade Promotion Agreement (US-Peru TPA), and the European Union-Cameroon Economic Partnership Agreement (EU-Cameroon

EPA). These agreements were selected based on their rankings in the Forestry Provisions Depth and Coverage Index (FPDCI) developed in Chapter 3, which analyzed 51 trade agreements. The US-Peru TPA ranked 1st, the EU-Cameroon EPA ranked 22nd, and the USMCA ranked 25th. This selection reflects the agreements within the top 25 of the FPDCI that also document forestry-related cooperative activities.

This chapter is organized as follows. Section 4.2 introduces the conceptual model that serves as the analytical framework for evaluating forestry-related cooperative activities. Following this, Section 4.3 outlines the methods and data sources employed in the study. Section 4.4 applies the conceptual model to the three selected trade agreements. This is then followed by Section 4.5 which discusses the results and concludes with Section 4.6.

4.2 Results-based Conceptual Model

In this section, I propose and present a results-based conceptual model for evaluating the results of cooperative activities within trade agreements. The overarching goal is to explain why certain cooperative efforts succeed or fail, and demonstrate how they can be systematically assessed, thereby addressing whether forestry-related cooperative activities arising from trade agreements generate tangible results.

4.2.1 Rationale

Evaluating cooperative activities within forestry-related trade provisions requires a comprehensive yet flexible framework. While individual frameworks exist, such as Impact Measurement for causal analysis, Sustainability Impact Assessment (SIA) for evaluating the environmental and social dimensions of trade agreements, and Results-Based Management (RBM) for accountability and iterative improvement, no single approach fully captures the interconnected nature of cross-border forestry cooperation arising from trade agreements.

By integrating the core principles of Impact Measurement, Sustainability Impact Assessment, and Results-Based Management, this results-based conceptual model pursues three interrelated objectives. First, it seeks to trace the causal pathways through which forestry-related cooperative activities may generate both immediate and longer-term changes. Second, it embeds sustainability considerations into the assessment of these activities, thereby acknowledging the environmental, social, and economic dimensions critical to forestry governance. Third, it aims to delineate accountability and monitoring mechanisms that foster iterative improvements over time. While these objectives define the model's theoretical scope, practical data and resource constraints mean that the case studies will emphasize plausible

contributions and employ a mix of qualitative and quantitative indicators, rather than fully exhaustive measures of causality.

In doing so, the model aligns with the growing body of research suggesting that well-designed cooperative activities backed by solid governance and implementation mechanisms can yield tangible improvements on the ground (Adanma & Ogunbiyi, 2024; Benchekroun & Long, 2012; Cordonier Segger, 2021; Yoo & Kim, 2016).

From the Impact Measurement realm, the conceptual model adopts the principle that it is essential to evaluate activities across multiple tiers namely, outputs, outcomes, and impacts (Lam & Tan, 2021; Mayne, 2017; Velut et al., 2022). These tiers help clarify how and why changes occur, providing a logical sequence that traces the direct products of an intervention (e.g., a training workshop) through intermediate results (e.g., enhanced stakeholder capacity) to ultimate effects on deforestation rates or biodiversity. Building on Ebrahim and Rangan's (2014) emphasis on causal attribution, the results-based model highlights that each tier should be linked by a clear logical pathway, making it possible to assess whether specific cooperative activities contribute to broader sustainability goals.

Given the environmental and socio-economic complexities in the forestry sector, Sustainability Impact Assessment (SIA) frameworks reinforce the need to consider institutional contexts when assessing the effectiveness of cooperative activities (Kirkpatrick & George, 2004; Moïsé & Rubínová, 2021). Marx and Loo (2021) highlight that governance structures play a critical role in shaping the scope and success of sustainability interventions. Accordingly, the model integrates these institutional factors to ensure that cooperative activities are not examined in isolation but rather in relation to broader political, economic, and environmental processes.

Results-Based Management (RBM) contributes the action-oriented dimensions of accountability, monitoring, and adaptive learning (Binnendijk, 2000; World Bank Group, 2006). Logical frameworks and indicator-based tracking mechanisms, common in RBM, enable stakeholders to monitor progress in real time, make informed adjustments, and foster transparent reporting of both short-term outputs and longer-term outcomes (Kusek & Rist, 2004). This practical emphasis on iterative feedback loops is particularly relevant for forestry-related cooperative activities, which often unfold under evolving environmental conditions and require ongoing monitoring and stakeholder engagement.

4.2.2 Conceptual model

In operationalizing these frameworks, the model conceptualizes the evaluation of forestry-related cooperative activities around three interlinked dimensions: (1) mapping and categorization of forestry-related cooperative activities, (2) Institutional and contextual factors, and (3) evaluation of outputs, outcomes, and impacts.

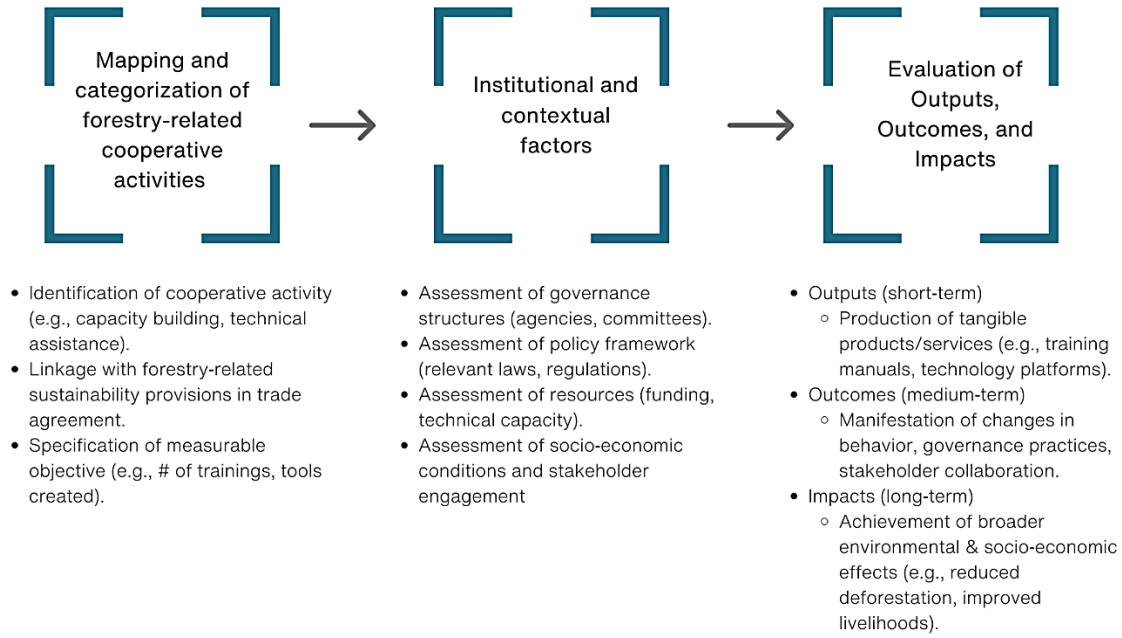
In this model, cooperative activities are posited to generate immediate outputs, which in turn evolve into intermediate outcomes and ultimately contribute to long-term impacts in sustainable forest management. Hence, it employs a comparative, process-tracing approach to establish sequential linkages between the selected cooperative activities and their subsequent outputs and outcomes. By carefully examining the case studies, this study documents how cooperative inputs are directly associated with tangible outputs, and how these outputs give rise to measurable outcomes. This methodical tracing reinforces the causal inference, ensuring that the improvements observed in the forestry sector are attributed to the cooperative activities activated by the trade agreements.

First, mapping and categorization of forestry-related cooperative activities provides the foundation for understanding how trade agreements translate high-level forestry provisions into tangible initiatives. Drawing on RBM principles, each activity is described in terms of logical links to measurable targets, thereby laying a clear path for subsequent evaluation. This process also benefits from the broad lens of SIA, which highlights the importance of considering environmental, social, and economic dimensions when classifying activities. By integrating these perspectives, the conceptual model ensures that each cooperative initiative is not only identified and labeled but also contextualized within a sustainability framework. This groundwork aids in discerning how well these activities align with both the trade agreement's commitments and broader environmental governance objectives.

Second, institutional and contextual factors are woven into the model, emphasizing that cooperative activities do not operate in a vacuum but rather within specific governance structures, funding mechanisms, and policy environments. Here, SIA's focus on the interplay between institutional frameworks and sustainability outcomes becomes particularly significant. Different states vary in governance capacity, resource availability, and ecological priorities, which can either facilitate or hinder the effectiveness of forestry-related cooperation. Incorporating these elements resonates with RBM's focus on accountability and performance management, as it allows for the evaluation of how institutional arrangements support or constrain the translation of activities into results. By acknowledging the intricate interactions

among stakeholders, regulators, and trade partners, the model captures the importance of local contexts for shaping sustainable forestry practices.

Figure 36 Results-based Conceptual Model



This figure illustrates the results-based conceptual model employed in the study, showing how forestry-related cooperative activities are first mapped and categorized, then examined through institutional and contextual factors, and finally evaluated in terms of short-term outputs, medium-term outcomes, and long-term impacts.

Finally, evaluating outputs, outcomes, and impacts is central to measuring the extent to which these cooperative activities generate tangible progress toward sustainability goals. The model adopts a tiered structure that distinguishes between short-term results (outputs), intermediate changes in behavior or capacity (outcomes), and long-term environmental and socio-economic transformations (impacts). This progression is enriched by SIA, which provides the framework to integrate environmental, social, and economic considerations into each evaluative tier. At the same time, RBM's emphasis on measurable indicators and adaptive learning facilitates systematic tracking of performance over time, allowing for continual refinement of activities. By combining these features, the conceptual model not only offers a more nuanced view of how forestry-related cooperative activities evolve but also clarifies how each activity's success (or failure) can inform future policy and practice.

An important question to be resolved is whether these results are ascribed to the trade agreement rather than to broader exogenous influences. This study addresses this by linking

Sustainability Impact Assessments (SIAs)/Environmental Impact Assessments/Environmental Reviews of each agreement in the case studies with the forestry provisions and the cooperative activities that arise from them. Evidence indicates that countries with prior experience in negotiating more stringent sustainability provisions, either through previous trade agreements or strong domestic regulatory frameworks, tend to replicate these high standards in new trade arrangements (Bronckers & Gruni, 2021; Jinnah & Lindsay, 2016; Polanco Lazo & Sauvé, 2018; Schmieg, 2019). While this pattern is well documented, it does not preclude the impact of other factors such as domestic politics, global shifts in environmental norms, or industry pressures, which can also shape a country's forest governance trajectory. Moreover, prior experience with stringent sustainability policy does not always guarantee equally robust replication in practice; institutional weaknesses or competing priorities can dilute these commitments. Although one might expect that agreements scoring higher on the FPDCI would reflect greater differences in domestic forestry policies, the consistency observed across case studies suggests that pre-existing commitments and negotiated norms are also decisive drivers. This alignment between EIA/SIA recommendations, forestry provisions, and cooperative activities substantiates the study's attribution of outputs and outcomes to the trade agreement's cooperative activities. The study recognizes that sustained effects of these outputs and outcomes can generate long-term impacts, which are also subject to multiple, overlapping external influences.

The next section of this chapter will describe the methods used to apply this model to the three selected trade agreements, the US-Peru TPA, the USMCA, and the EU-Cameroon.

4.3 Methods and Data

The study adopts a qualitative, desk-based research approach, leveraging project documents and reports, operational plans, and trade and environment or sustainable development committee meeting reports as secondary data sources.

The research employs a comparative case study methodology and document analysis to investigate the forestry-related cooperative activities linked to the three selected trade agreements: the United States-Mexico-Canada Agreement (USMCA), the United States-Peru Trade Promotion Agreement (US-Peru TPA), and the European Union-Cameroon Economic Partnership Agreement (EU-Cameroon EPA). A qualitative research approach was chosen to provide a detailed, contextual understanding of cooperative activities and their results.

The comparative case study methodology facilitates an in-depth examination of diverse contexts, enabling the exploration of unique factors that influence the design and outcomes of

cooperative activities (Krehl & Weck, 2020). By comparing these cases, the study identifies patterns, similarities, and differences, offering insights into how varying policy approaches and institutional frameworks impact forestry-sector results (Fischer et al., 2022; Schusser et al., 2015). Document analysis complements this approach by systematically reviewing and interpreting official agreements, reports, operational plans, and associated publications, ensuring a comprehensive understanding of institutional processes and implementation dynamics (Bluffstone et al., 2022; Hull & Ashton, 2008).

4.3.1 Case study selection

The three trade agreements (USMCA, US-Peru TPA, and EU-Cameroon EPA) were selected based on their rankings in the Forestry Provisions Depth and Coverage Index (FPDCI) developed in Chapter 3. The US-Peru TPA ranked 1st, the EU-Cameroon EPA ranked 22nd, and the USMCA ranked 25th. This selection ensures the inclusion of agreements with forestry provisions and documented cooperative activities, providing a diverse basis for comparative analysis. The agreements also represent different institutional contexts, geographic regions, and policy approaches.

4.3.2 Data

The data collection process involved identifying and screening relevant documents through online databases, official trade agreement repositories, and organizational archives. Inclusion criteria ensured that documents were relevant to forestry provisions, explicitly mentioned cooperative activities, and provided data on outputs and outcomes. These documents were systematically reviewed to ensure comprehensiveness and relevance, forming the foundation for the analysis.

The data sources include:

- Project documents and reports: provide detailed descriptions of cooperative activities, including objectives, timelines, and progress.
- Operational plans: outline the design, implementation, and intended results of forestry-related cooperative activities, offering insights into the scope and focus of activities.
- Trade and Environment/Sustainable Development Committee meeting reports: detail institutional deliberations, decisions, and implementation processes, offering a window into how cooperative activities are governed and operationalized.

These official records, produced independently of this study, serve as non-reactive sources that help minimize direct researcher influence on data collection and interpretation (Johnston, 2014), providing insights into institutional processes and the operationalization of forestry-related cooperative activities.

4.3.3 Limitations

While this study provides a systematic analysis of forestry-related cooperative activities of trade agreements, it is not without limitations.

The reliance on project documents and reports, operational plans, and trade and environment or sustainable development committee meeting reports as data sources introduces some constraints. Gaps may exist where records are incomplete, inaccessible, or lacking in detail, which can affect the comprehensiveness of the analysis. Additionally, as a desk-based study, this research does not incorporate fieldwork or stakeholder interviews. Although document analysis offers valuable insights into institutional processes, it may not fully capture the perspectives of those directly engaged in implementing cooperative activities. These constraints suggest opportunities for future research to complement document analysis with fieldwork and stakeholder engagement.

The analysis focuses on three trade agreements which were selected based on their inclusion of forestry provisions, their rankings in the Forestry Provisions Depth and Coverage Index (FPDCI) and because of their documented forestry-related cooperative activities. While these agreements represent diverse approaches and contexts, they do not encompass the full spectrum of forestry-related cooperative activities globally. However, this focused evaluation allows for a deep and detailed analysis of selected cases, offering valuable insights that can inform broader discussions on the design and implementation of cooperative activities in trade agreements. Future studies could expand the scope to include additional agreements, enhancing the generalizability of findings.

In the next section of this chapter, the conceptual model is applied to each case study.

4.4 Case Studies

4.4.1 United States - Peru Trade Promotion Agreement

The United States-Peru Trade Promotion Agreement (US-Peru TPA), which entered into force on February 1, 2009, aimed to strengthen bilateral trade relations while addressing significant

environmental challenges in Peru (Peinhardt et al., 2019). The agreement is notable for including detailed environmental commitments, specifically in Annex 18.3.4, which is dedicated to forest sector governance. This annex introduced obligations to improve forest management, combat illegal logging, and promote the sustainable use of natural resources. These provisions were particularly relevant given the economic and ecological significance of Peru's forests, which cover nearly 60% of the country's land area and are critical to the Amazon basin's biodiversity and carbon storage (Velut et al., 2022).

At the time of the agreement, Peru faced substantial challenges in its forestry sector. Widespread illegal logging, weak regulatory frameworks, and limited institutional capacity had contributed to significant deforestation and biodiversity loss (Peinhardt et al., 2019). These issues undermined efforts to establish sustainable forestry practices and disrupted the livelihoods of communities reliant on forest resources. Annex 18.3.4 sought to address these issues through enforceable commitments and collaborative mechanisms, aiming to improve the governance of Peru's forestry sector and align trade practices with environmental objectives (Del Gatto et al., 2009).

Annex 18.3.4 outlined specific provisions to strengthen forest governance and ensure the legality of timber production. These included commitments to enhance enforcement mechanisms by increasing personnel, developing anti-corruption strategies, and implementing stricter penalties for violations of forestry laws. The Annex also required Peru to develop systems for tracking timber from harvest to export, including the establishment of the National Forestry and Wildlife Information System (MC-SNIFFS). This system was designed to provide traceability and ensure compliance with legal and regulatory requirements, addressing a major gap in forest sector oversight. Additionally, the agreement emphasized the importance of indigenous participation, requiring the government to support indigenous communities in managing their lands sustainably, while maintaining oversight to prevent unauthorized activities (Velut et al., 2022).

Building on these commitments, the TPA's forest sector obligations were further shaped by the findings of its Environmental Review (ER), which flagged critical governance vulnerabilities (Del Gatto et al 2009). In operationalizing these recommendations, the TPA converted identified gaps into legally binding measures. As delineated in the TPA's Environmental Affairs Council work programs, a suite of capacity-building and technical assistance activities then generated immediate outputs aimed at strengthening Peru's forest sector governance. The alignment of the ER's conclusions with the forestry provisions and their subsequent implementation via

cooperative activities forms a clear causal chain that supports attributing observed results to the TPA.

The institutional framework established under the agreement included the creation of OSINFOR, an independent agency tasked with monitoring forest concessions and ensuring compliance with legal standards. The Environmental Cooperation Agreement (ECA), which accompanied the trade agreement, provided technical and financial assistance to support these initiatives.

4.4.1.1 Mapping and categorization of forestry-related cooperative activities

The Peru Bosques Project, implemented between 2011 and 2016, represents the main forestry-related cooperative activity undertaken as part of the US-Peru TPA (Chemonics International Inc., 2016). While it is a single overarching initiative, the project encompassed an array of activities aimed at addressing the commitments set forth in Annex 18.3.4 of the TPA. These activities targeted institutional strengthening, technological development, community empowerment, and forest governance reforms (Peinhardt et al., 2019) and represent a multifaceted approach to improving forestry sector governance in Peru.

The Peru Bosques Project encompassed a range of cooperative activities designed to strengthen Peru’s capacity to meet its forestry-related commitments under the TPA. A significant component of the project involved capacity-building programs, which provided technical training to government officials, local communities, and private sector actors. Another critical focus of the project was technological innovation. The development and implementation of the National Forestry and Wildlife Information System (MC-SNIFFS) stood out as a key achievement (Chemonics International Inc., 2016). MC-SNIFFS provided a platform for tracking timber throughout the supply chain, from harvest to export, ensuring traceability and legality (Chemonics International Inc., 2016). Additionally, the system contributed to streamlining enforcement processes and increasing collaboration between regional and national forestry authorities, further embedding transparency into Peru's forestry governance framework. The project also facilitated the deployment of tools like the Synchronized Forestry Production Method (MAFS), which improved operational planning and efficiency in forestry concessions.

The scope of activities under the Peru Bosques Project was geographically concentrated in the Amazonian regions of Loreto, Ucayali, and Madre de Dios. These regions, characterized by their rich biodiversity and significant challenges related to deforestation and illegal logging, were

strategic focal points for intervention. Activities were tailored to address the unique environmental and socio-economic conditions of these areas, with an emphasis on strengthening local governance and community participation.

The Peru Bosques Project directly supported the objectives outlined in Annex 18.3.4 of the US-Peru TPA, which emphasized combating deforestation, reducing illegal logging, and promoting sustainable forestry practices. By developing technological systems like MC-SNIFFS, the project enhanced transparency and accountability in the timber trade, addressing core requirements of the Annex. The system's integration into Peru's regulatory framework exemplified the alignment of project activities with the Annex's mandate for enforcement and verification mechanisms.

Capacity-building initiatives under Peru Bosques were closely aligned with the annex's call for strengthening institutional capacity and enhancing enforcement personnel. The training of government officials, community monitors, and private sector actors addressed critical gaps in governance and enabled more effective implementation of forestry laws and regulations.

The project supported community oversight initiatives by training monitors, establishing decentralized offices, and creating sustainability plans for indigenous organizations. While these efforts aimed to increase community participation, they were largely structured and facilitated by external actors, with communities playing a participatory rather than leadership role. This externally structured approach limited the ability of indigenous organizations to independently shape governance outcomes and foster long-term ownership of oversight mechanisms. Structural barriers, such as inadequate resources and reliance on external funding, further constrained their autonomy. Furthermore, as Velut et al. (2022) note, certain forestry governance changes were implemented without adequate consultation of indigenous communities. This lack of consultation not only undermined the principles of prior informed consent but also contributed to a persistent disconnect between national policies and the realities of indigenous forest governance.

4.4.1.2 Institutional and contextual factors

The implementation of the forestry-related commitments under the United States-Peru Trade Promotion Agreement (US-Peru TPA) has been significantly influenced by a complex interplay of institutional and contextual factors. The establishment of key governance frameworks, the allocation of financial resources, and the structural design of the agreement itself have shaped both its achievements and ongoing challenges. These elements illustrate the critical role of

strong institutions, sustained funding, and well-structured agreements in addressing environmental governance issues.

The governance framework established under the US-Peru TPA relies on multiple institutions, many of which were strengthened or created as a direct result of the agreement. The National Forestry and Wildlife Service (SERFOR) and the Forestry and Wildlife Resources Oversight Entity (OSINFOR) are two central institutions that exemplify this approach. SERFOR, established by Law No. 29763 (the Forest and Wildlife Law) in 2014, serves as the lead agency for forestry governance in Peru. It is tasked with formulating policies, coordinating with regional authorities, and promoting the sustainable management of forest and wildlife resources. Its creation marked a critical step in consolidating Peru's forest governance framework and aligning it with the commitments under the TPA.

OSINFOR, established in 2008 under Legislative Decree No. 1085, became fully operational within the framework of the TPA. It was designed as an independent oversight body to supervise forest resource management, audit forest concessions, and enforce compliance with forestry laws. By operating independently of executive ministries, OSINFOR plays a pivotal role in ensuring accountability in the forestry sector, addressing illegal logging, and promoting transparency in forest management practices.

In addition to these domestic institutions, the US-Peru TPA also established bilateral mechanisms to oversee environmental provisions. The Environmental Affairs Council (EAC) provides high-level oversight of the agreement's environmental commitments, facilitating dialogue and coordination between the United States and Peru. Under the EAC, the Sub-Committee on Forest Sector Governance specifically focuses on the implementation of the Forestry Annex. This sub-committee serves as a platform for monitoring progress, sharing information, and addressing challenges in the forestry sector. It also engages with stakeholders, including government agencies, non-governmental organizations, and indigenous representatives, to ensure an inclusive and participatory governance process.

The financial resources supporting the implementation of the Forestry Annex have been essential to its progress. The Peru Bosques Project, funded by USAID, was the primary vehicle for delivering technical and financial assistance to Peru's forestry sector. Over its five-year duration, the project facilitated capacity-building initiatives, the development of MC-SNIFFS, and the establishment of community-led oversight mechanisms. This funding was critical in bridging gaps in institutional capacity and laying the groundwork for sustainable forest management practices.

Other international donors, including the World Bank and the United Nations Development Programme (UNDP), contributed additional funding and expertise to support institutional reforms and governance improvements. These resources enabled the development of infrastructure, monitoring systems, and enforcement mechanisms. However, the heavy reliance on external funding has raised concerns about the long-term sustainability of these initiatives (Gianella et al., 2021). Efforts are ongoing to integrate these activities into Peru's domestic budgetary framework, but significant political and institutional commitment will be required to achieve financial independence.

The design of the US-Peru TPA has played a crucial role in shaping the implementation of forestry-related commitments. The bilateral nature of the agreement allows for direct engagement and accountability between the two countries, enabling tailored solutions to shared challenges. Annex 18.3.4 outlines specific, enforceable obligations, including timelines for reforms, measurable targets for enforcement, and requirements for transparency in the timber trade. These provisions provide a clear framework for addressing issues like illegal logging and deforestation, distinguishing the TPA from other trade agreements with less specific environmental commitments.

The agreement's compliance mechanisms further enhance its effectiveness. For example, the United States can request audits or verifications of Peru's compliance with forestry laws, ensuring ongoing oversight. The Sub-Committee on Forest Sector Governance plays an integral role in this process, providing a collaborative space for addressing compliance challenges and coordinating capacity-building activities. While these mechanisms have driven significant progress, they have also highlighted disparities in the ability of smaller producers and informal actors to meet compliance standards. This highlights the need for a balanced approach that combines strict enforcement with support for marginalized stakeholders.

4.4.1.3 Evaluation of Outputs, Outcomes, and Impacts

Outputs

The TPA facilitated the operationalization of the National Forestry and Wildlife Information System (MC-SNIFFS), a central technological platform designed to trace timber through the supply chain, ensuring compliance with legal requirements. This system represents a milestone in increasing transparency and reducing opportunities for illegal logging. Its development included the training of over 340 users and significant investments in hardware, software, and support systems. Despite these advances, the rollout of MC-SNIFFS faced delays, and challenges related to its adoption remain evident, particularly among smaller forestry operators

who lack the technical capacity to engage with the system effectively. Critics have argued that the system's effectiveness is contingent on consistent enforcement and its integration with broader governance frameworks, which remain uneven (Velut et al. 2022; Gianella et al. 2021) .

The enactment of the Forestry and Wildlife Law (Law No. 29763) in 2011 marked another key output of the TPA. This law created a comprehensive framework for sustainable forest management, including stricter penalties for illegal activities and provisions for indigenous participation. However, the implementation of this law has faced hurdles. Stakeholders have noted that weak institutional coordination and limited financial resources at the regional level have hampered its enforcement. Moreover, while the law sets ambitious standards, some critiques point to a lack of alignment between these standards and the realities of local communities and small-scale operators.

Capacity-building initiatives were also a significant output, with training programs targeting government officials, community monitors, and private sector stakeholders. These programs sought to address knowledge gaps and foster compliance with new regulatory requirements. However, questions remain about the sustainability of these efforts. Many training sessions were one-time events, and there is limited evidence of follow-up or ongoing support to ensure the retention and application of skills. This has raised concerns about the long-term effectiveness of these initiatives in achieving systemic change.

Outcomes

The reforms introduced under the TPA have yielded measurable outcomes, including improvements in governance and enforcement capacities. The establishment of OSINFOR as an independent oversight body has been somewhat impactful in auditing forest concessions and addressing non-compliance. Additionally, the role of SERFOR in policy development and inter-agency coordination has strengthened Peru's forestry governance framework. However, critiques of these outcomes point to persistent enforcement gaps (Velut et al. 2022). Limited infrastructure and resources in these areas have allowed illegal activities to continue relatively unchecked, highlighting disparities in the application of governance reforms (Gianella et al. 2021; Peinhardt et al. 2019).

One of the more promising outcomes has been the increased adoption of Forest Stewardship Council (FSC) certification among Peruvian forestry businesses. By 2020, FSC-certified forest management areas covered over 1 million hectares (Forest Stewardship Council, 2020), indicating progress toward sustainable forestry practices. However, certification efforts have

primarily benefited larger operators with the resources to meet rigorous standards. Smaller producers and informal operators, who form a significant portion of the forestry sector, have largely been excluded from these programs, exacerbating existing inequalities. Gianella et al. (2021) suggest that more inclusive approaches are needed to ensure that sustainability initiatives do not marginalize smaller stakeholders.

Impacts

The long-term impacts of the TPA on deforestation rates remain difficult to isolate, given the influence of broader economic and environmental factors. From 2008 to 2023, Peru lost 2.24 Mha of humid primary forest, accounting for 66% of its total tree cover loss during this period (Global Forest Watch, n.d). This represents a 3.2% decrease in Peru's humid primary forest area, highlighting the persistent pressures from agricultural expansion, mining, and illegal logging that have continued since the TPA came into effect. In 2020, Peru had 71.7 Mha of natural forest, extending over 55% of its land area, and lost approximately 166,000 hectares of natural forest that year, equivalent to 150 Mt of CO_2 emissions (Global Forest Watch, n.d). While tools like MC-SNIFFS and institutional reforms have strengthened enforcement, their impact on curbing deforestation has been limited by gaps in coordination, funding, and political will. Critics have pointed out that without addressing the underlying drivers of deforestation, such as poverty and land tenure issues, these efforts are unlikely to produce sustained reductions in forest loss (Del Gatto et al., 2009; Gianella et al., 2021).

In terms of biodiversity preservation, the TPA has contributed to the protection of species listed under CITES, including Big Leaf Mahogany (*Swietenia macrophylla*), through enhanced monitoring and export controls. According to Velut et al. (2022), the agreement facilitated a notable reduction in illegal exports of Big Leaf Mahogany through cooperative activities, including the development of the MC-SNIFFS system and the strengthening of OSINFOR's oversight capacity.

These impacts demonstrate the potential of trade agreements to address biodiversity conservation when supported by robust enforcement mechanisms. However, the effectiveness of these measures depends on their consistent application, which has been uneven across different regions and institutions. Additionally, while the reduction in illegal Mahogany trade is a positive outcome, data on broader biodiversity impacts remain sparse, making it difficult to assess the full extent of these initiatives' success.

4.4.2 United States-Mexico-Canada Agreement

The United States-Mexico-Canada Agreement (USMCA) is the trilateral agreement governing trade and economic relations among the United States, Mexico, and Canada. Replacing the North American Free Trade Agreement (NAFTA), the agreement entered into force on July 1, 2020, introducing revised commitments and obligations across several areas.

Forestry holds a particularly important place within the USMCA. North America's forests are globally significant, both as vast ecosystems providing critical services such as carbon storage, water filtration, and biodiversity conservation, and as a source of economic livelihood for millions, including Indigenous peoples and rural communities. Additionally, the three countries are major global players in the production, trade, and consumption of forest products. These dynamics underline the importance of sustainable forest management and legal timber trade to the economic and environmental priorities of the USMCA.

Article 24.3 of the agreement articulates the commitment of the parties to sustainable forest management, biodiversity conservation, and the prevention of illegal logging and associated trade. It emphasizes the critical role of forests in providing ecosystem services and acknowledges their contributions to carbon storage, water and soil health, and the preservation of wildlife habitats. Recognizing the economic and environmental implications of illegal logging, the agreement also promotes the exchange of information, capacity building, and cooperative efforts to strengthen the enforcement of forestry-related commitments.

In its Environmental Impact Assessment of the USMCA, the Government of Canada emphasized that modernizing the agreement was intended not only to preserve market access but also to strengthen environmental protections, particularly by expanding forestry provisions aimed at curbing illegal logging and promoting sustainable forest management. This assessment identified key challenges in the forest sector, thereby providing a basis for integrating more stringent forestry provisions into the USMCA. The United States' Environmental Review likewise corroborated these findings, indicating that adherence to domestic environmental laws and comprehensive verification mechanisms serve as vital instruments for improving forest governance and sustainability. Building on these negotiated commitments, the cooperative activities launched under the USMCA operationalize these forestry provisions in tangible ways.

4.4.2.1 Mapping and categorization of forestry-related cooperative activities

Under the USMCA, four principal cooperative efforts were identified to address various dimensions of sustainable forestry management. While they differed in scope and methodology, they collectively underlined the agreement's broader environmental objectives, reflecting the complex interplay between trade and resource conservation in North America.

Activity 1: Strengthening the Implementation and Effective Enforcement of CITES for Timber in North America

This project, which ran from November 2021 to November 2023, sought to bolster compliance with CITES regulations by standardizing species identification procedures, expanding enforcement capabilities, and examining traceability options (Commission for Environmental Cooperation, 2023a). A central component was the training of 36 enforcement officers (12 per country) in species identification and trade risk assessment. Meanwhile, exchanges between specialized laboratories worked towards harmonization of technical methodologies, culminating in the publication of a report detailing national legislation and strategies for implementing CITES Source Code "Y." By emphasizing both interagency coordination and practical enforcement tools, the initiative is expected to enhance North America's capacity to detect and intercept illegally traded timber products (Commission for Environmental Cooperation, 2023a).

Activity 2: Regional Workshop on the Evaluation of Capacities to Identify Woods in the Trade of CITES-Listed Priority Timber Species

Held over three days in November 2018, this workshop addressed a core challenge in enforcing forestry regulations: the reliable identification of timber species, especially those with look-alike counterparts. By training 50 participants from enforcement agencies, scientific institutions, and NGOs, the workshop expanded regional expertise in forensic and laboratory techniques for wood identification (Commission for Environmental Cooperation, 2019). An evaluation report of existing capacities provided baseline data on gaps in enforcement, while the development of a reference collection of wood samples ensured that newly learned methods could be supported by comprehensive, empirical databases (Commission for Environmental Cooperation, 2019). In addition to directly improving species identification proficiency, the workshop laid the groundwork for an enduring network of scientists and enforcement officials committed to continuous data-sharing and collaboration.

Activity 3: Integrated Modeling and Assessment of Climate Change Mitigation Options in the North American Forest Sector

Conducted between 2015 and 2016, this project sought to quantify and enhance the climate change mitigation potential of North American forests and forest products (Commission for Environmental Cooperation, 2015). Researchers developed region-specific carbon accounting models, applying them across five key landscapes in Canada, the United States, and Mexico. They assembled datasets on land cover and carbon stocks in harvested wood products spanning a total area of approximately 500 million hectares, enabling a more nuanced assessment of forest carbon fluxes and potential policy interventions (Kurz et al., 2016). The resulting peer-reviewed articles and policy briefs have informed national climate strategies, reinforcing the importance of forest conservation and sustainable management in fulfilling obligations under the Paris Agreement. Furthermore, these models continue to guide ongoing research and adaptation planning, underscoring the long-term value of integrated, trilateral scientific collaboration.

Activity 4: Advancing Responsible Consumption of Forest Products

Launched in 2024 and slated to run through 2026, this initiative adopts a market-based approach to address deforestation, illegal logging, and unsustainable timber practices (Commission for Environmental Cooperation, 2024b). Stakeholders ranging from retailers to policymakers are central to this effort: over 100 retailers and policymakers are targeted by awareness campaigns that promote certified sustainable wood products, while 15 major industry stakeholders are already partnering to enhance certification under schemes such as FSC and PEFC (Commission for Environmental Cooperation, 2024b). In parallel, guidelines for sustainable wood sourcing are under development to standardize best practices in supply chains. Although the project is in its early stages, it illustrates how consumer-driven strategies can reinforce accountability and transparency, potentially reducing deforestation on a broader scale by shifting procurement norms toward verified legal and sustainable sources.

4.4.2.2 Institutional and contextual factors

The forestry-related cooperative activities under the USMCA are implemented through the Commission for Environmental Cooperation (CEC), an organization originally created under the North American Agreement on Environmental Cooperation (NAAEC) and retained in the USMCA framework. Operating as a central hub for environmental collaboration, the CEC coordinates multinational initiatives, provides technical support, and ensures that projects align with the agreement's environmental objectives (Jinnah & Lindsay, 2015).

The Commission for Environmental Cooperation (CEC) operates through three primary components that ensure an integrated approach to environmental governance. The Council, comprising the environment ministers or their equivalents from Canada, Mexico, and the United States, approves operational plans and budgets while setting strategic priorities for cooperative initiatives, including those that address forestry sustainability at the highest levels of government. The Secretariat, headquartered in Montreal, manages the technical and operational dimensions of these projects, fosters cross-border collaboration, and serves as a knowledge broker by synthesizing data from various sources and guiding evidence-based implementation. Meanwhile, the Joint Public Advisory Committee (JPAC) brings civil society voices into the process, promoting both transparency and inclusivity in the CEC's activities.

Stakeholder participation is integral to these forestry-related cooperative activities. Federal government agencies remain the principal implementers, offering enforcement expertise and regulatory frameworks to support initiatives such as CITES implementation and species identification. Non-governmental organizations and academic institutions supplement these efforts through capacity-building, research, and innovation in timber tracking technologies. Private sector entities, particularly certification bodies and forestry companies, play a pivotal role by applying best practices, maintaining traceable supply chains, and advancing market-based solutions to illegal logging. Indigenous and local communities are also essential partners, as their traditional knowledge and practices are recognized for effectively contributing to carbon mitigation and sustainable resource management. Their inclusion aligns closely with the USMCA's emphasis on inclusive governance and localized approaches to environmental stewardship (Laurens et al., 2022).

The funding for these cooperative activities largely stems from the CEC's annual budget, which is supported equally by the three member states. This cost-sharing arrangement offers a degree of financial stability for multi-year projects, though additional in-kind contributions and external funding streams often supplement specific tasks that require specialized tools or prolonged commitments. Workshops on CITES enforcement and timber species identification, for instance, benefited from technical inputs and financial support from external conservation initiatives, reflecting how strategic partnerships can further expand the scope of CEC-funded projects.

Despite the relative stability provided by equal-cost sharing, certain projects may experience funding variability, especially when advanced research or extended timelines are involved. The Integrated Modeling and Assessment of Climate Change Mitigation Options in the North American Forest Sector exemplified the need for sustained investment over multiple years, as it

required ongoing data collection and collaboration across multiple institutions. Fluctuations in external support can pose challenges to project continuity, especially for capacity-building components or specialized technical endeavors.

The USMCA's design plays a decisive role in shaping these forestry-related cooperative activities. By incorporating the forestry provisions directly into the main body of the agreement rather than relegating them to a side agreement, the Parties elevate the visibility and enforceability of provisions related to illegal logging, biodiversity conservation, and sustainable forest management. Article 24.3 sets forth a clear mandate for addressing these issues and allows for targeted interventions that align with the agreement's objectives.

4.4.2.3 Evaluation of Outputs, Outcomes, and Impacts

Outputs

As of 2025, the above-mentioned cooperative activities have generated a range of outputs and deliverables that set the stage for improved forest governance in North America. The project Strengthening the Implementation and Effective Enforcement of CITES for Timber in North America, which concluded in late 2023, produced a comprehensive review of national legislation related to CITES implementation. It also delivered specialized training in species identification and trade risk assessment to 36 enforcement officers—12 from each of the three countries—and culminated in a technical report on using CITES Source Code "Y" for timber species. Meanwhile, the Regional Workshop on the Evaluation of Capacities to Identify Woods in the Trade of CITES-listed Priority Timber Species provided a critical foundation for regional cooperation by generating an evaluation of existing identification capacities, offering in-depth forensic training to 50 participants, and establishing a reference collection of wood samples to standardize methodologies across multiple agencies and institutions.

The Integrated Modeling and Assessment of Climate Change Mitigation Options in the North American Forest Sector, though completed in 2016, left a lasting legacy in the form of carbon accounting models tailored to regional contexts. These models spanned an impressive 500 million hectares of forested landscapes in Canada, Mexico, and the United States, forming the basis for peer-reviewed articles and policy briefs that continue to inform national and subnational climate mitigation strategies. Finally, Advancing Responsible Consumption of Forest Products, which was initiated in 2024 and remains in progress, has already produced draft guidelines for sustainable wood sourcing, engaged over 100 retailers and policymakers in educational campaigns, and secured partnerships with 15 major industry stakeholders to advance certification under schemes like FSC and PEFC. Although it is still ongoing, this

consumer-oriented effort shows promise for steering the wood products market toward more transparent and environmentally responsible practices.

Outcomes

In the aftermath of these immediate outputs, several noteworthy outcomes have begun to emerge. The Strengthening the Implementation and Effective Enforcement of CITES for Timber in North America project has led to a measurable improvement in enforcement capacity at border checkpoints and within forestry departments, enabling more consistent detection of illegal timber shipments and facilitating cross-border collaboration during investigations. The Regional Workshop on the Evaluation of Capacities to Identify Woods in the Trade of CITES-listed Priority Timber Species fostered a network of scientific and enforcement entities, further unifying protocols for detecting CITES-listed species and encouraging the ongoing exchange of best practices and data.

In parallel, the insights generated by the Integrated Modeling and Assessment of Climate Change Mitigation Options in the North American Forest Sector have helped elevate the role of forests in climate policy discussions throughout the region. Policymakers now consult the project's models and datasets when designing mitigation strategies, and these tools have provided a basis for aligning national policies with commitments under the Paris Agreement. Finally, early evidence suggests that the Advancing Responsible Consumption of Forest Products initiative has begun to shift demand patterns in the wood products sector, as retailers and policymakers incorporate sustainability criteria into procurement decisions. By spotlighting the importance of legally sourced and certified timber, this project has helped spark a broader dialogue around market-driven pathways to curb deforestation and support sustainable forest management.

Impacts

While it remains too early to fully quantify the longer-term influence of these projects, preliminary indicators point to several promising trends. The capacity-building and traceability initiatives associated with CITES enforcement may lead to meaningful reductions in illegal timber flows, enhancing biodiversity protection in ecologically sensitive regions. Strengthened oversight of at-risk species similarly contributes to broader conservation goals, aligning trade practices with the imperative to preserve critical habitats. The carbon modeling initiative, if applied consistently across federal and regional agencies, has the potential to reduce greenhouse gas emissions by foregrounding the sequestration value of well-managed forests

and harvested wood products. Market-based reforms also appear poised to scale up certified wood sourcing, potentially shifting significant segments of consumer demand away from illegal or unsustainable supplies.

Taken together, these projects offer a compelling illustration of how the USMCA's environmental provisions can translate into concrete on-the-ground measures. By integrating enforceable commitments, capacity-building endeavors, scientific research, and consumer-focused strategies, the USMCA's forestry-related cooperative activities prove that trade agreements do not need to be at odds with environmental priorities. Ongoing monitoring and adaptive management will nevertheless remain essential, particularly in regions where governance capacity, funding, or political will fluctuate. Yet the achievements realized up to this point provide a solid foundation for continued progress, reflecting both the potential and the inherent complexity of harmonizing international trade objectives with sustainable forest management in North America.

4.4.3 European Union-Cameroon Economic Partnership Agreement

The European Union-Cameroon Economic Partnership Agreement (EPA) is a trade agreement between the European Union (EU) and Cameroon, entered into force on August 4, 2016. This agreement forms part of a broader framework of Economic Partnership Agreements designed to foster trade, economic integration, and sustainable development between the EU and countries in the African, Caribbean, and Pacific (ACP) regions. The EU-Cameroon EPA aims to enhance trade flows by reducing tariffs, fostering regional integration, and supporting sustainable development initiatives.

Forestry holds a significant place within the EU-Cameroon EPA due to Cameroon's substantial forest resources and the economic importance of timber exports. Cameroon is home to one of Africa's largest forested areas, a critical part of the Congo Basin, often referred to as the "world's second lung" for its role in global carbon sequestration and biodiversity conservation. However, challenges such as illegal logging, unsustainable forestry practices, and biodiversity loss threaten these ecosystems. The EPA aims to address these issues by linking trade facilitation with commitments to sustainable forest management, ensuring that trade benefits align with ecological preservation and economic equity.

The forestry-related provisions within the EU-Cameroon EPA are found in Articles 50 and 52, which outline commitments to promote trade in legal and sustainable timber while enhancing governance and capacity in the forestry sector.

Article 50 establishes the shared commitment of the EU and Cameroon to facilitate trade in timber and forest products sourced from verifiably legal origins, contributing to sustainable development. Specific measures include the development of traceability systems to verify the legality of timber, independent audit and surveillance systems, and efforts to build consumer confidence in the sustainability of forest products. By promoting legality and sustainability, this provision directly targets the dual issues of illegal logging and market credibility.

Article 52 expands on cooperative efforts, emphasizing technical and financial assistance to strengthen regional integration and enhance forestry governance. It highlights support for initiatives such as the Treaty on the Conservation and Sustainable Management of Forests in Central Africa (COMIFAC) and Cameroon's Sub-Regional Convergence Plan. These measures aim to align regional priorities with the EPA's objectives, ensuring the conservation of forests while fostering economic growth.

4.4.3.1 Mapping and categorization of forestry-related cooperative activities

The UFA-Reforest initiative, formally known as "Reforestation in the Forest Management Units of Cameroon," is the primary forestry-related cooperative activity associated with the EU-Cameroon Economic Partnership Agreement (EPA). This initiative reflects the commitment of the EU and Cameroon to advancing sustainable forest management and fostering economic development within the forestry sector. Launched in 2022 and scheduled to conclude in 2026, UFA-Reforest operates as a long-term project focused on restoring degraded forest areas while supporting sustainable timber production (ATIBT, 2023).

Central to the UFA-Reforest project is its reforestation program, aimed at rehabilitating degraded lands within designated Forest Management Units (FMUs) in eastern Cameroon. The project's objective includes planting 240,000 trees over its four-year duration (ATIBT, 2023). High-value and ecologically significant species such as Assamela and Iroko are prioritized to restore biodiversity and ensure a sustainable timber supply. Seed collection activities, which have already yielded over 65,000 seeds, ensured genetic diversity and supported the production of quality seedlings. These seedlings are grown in nurseries until they are ready for planting, reflecting the project's systematic approach to ecological restoration.

In addition to reforestation, the initiative emphasizes capacity building to strengthen governance and sustainable practices within the forestry sector. Key stakeholders include private forestry companies, community representatives, and public institutions, all working collaboratively toward shared goals. Partner companies such as Pallisco, Grumcam-Alpicam, SEEF, and SEFAC contribute to the implementation of reforestation activities while benefiting from training

programs designed to enhance their forest management capabilities (ATIBT, 2023). These programs provide participants with technical knowledge and practical tools for sustainable forestry, helping to integrate these practices into their operational activities.

The geographic and temporal scope of UFA-Reforest is precisely defined. The project focuses on FMUs in East Cameroon, which are significant for both their biodiversity and their role in Cameroon's forestry economy. Implementation is phased, beginning with the reforestation of 17 hectares in the first year and expanding to 27 hectares annually in subsequent years. This incremental approach allows for adaptation and continuous improvement based on monitoring and evaluation findings. Regular site visits by EU delegations and technical assessments by project partners ensure accountability and alignment with stated objectives.

The UFA-Reforest initiative aligns directly with the forestry-related provisions of the EU-Cameroon EPA. By promoting the reforestation of degraded areas and supporting timber traceability, the project addresses the EPA's commitment under Article 50 to facilitate trade in legally sourced and sustainable timber. Furthermore, the capacity-building and stakeholder engagement components of the project reflect Article 52's emphasis on fostering regional cooperation and improving governance in the forestry sector. These efforts contribute to addressing deforestation and promoting sustainable economic development within Cameroon.

Through its integrated approach, UFA-Reforest operationalizes the EPA's commitments to sustainable development. By focusing on reforestation, biodiversity conservation, and governance, the project highlights the potential for cooperative activities to support environmental and economic objectives within the framework of a trade agreement.

4.4.3.2 Institutional and contextual factors

The governance structure enabling the implementation of UFA-Reforest under the EU-Cameroon Economic Partnership Agreement (EPA) is characterized by a multi-stakeholder approach. At the national level, the Ministry of Forests and Fauna (MINFOF) serves as the primary government agency overseeing project activities, ensuring alignment with Cameroon's forestry regulations and broader environmental policies. The European Union delegation provides strategic oversight and technical guidance to align the initiative with the objectives outlined in the EPA.

Implementation responsibilities are shared among various stakeholders, including the International Tropical Timber Technical Association (ATIBT), which acts as the project coordinator. Technical support is provided by Nature+, Gembloux Agro-Bio Tech at the

University of Liège, and the École Normale Supérieure de l'Enseignement Technique (ENSET) at the University of Douala. Private forestry companies, including Pallisco, Grumcam-Alpicam, SEEF, and SEFAC, contribute critical on-the-ground expertise and resources. These companies manage specific Forest Management Units (FMUs) targeted by the project and facilitate reforestation activities through direct involvement in nursery development and planting operationsCameroon reforestation.

Local communities are integral to the initiative, participating in activities such as seed collection, nursery maintenance, and planting. Their involvement not only ensures the integration of indigenous knowledge but also fosters local ownership of the reforestation process. Regular consultations and training workshops enhance the capacity of community members and ensure that project activities align with local priorities and expectations.

Coordination among these diverse stakeholders is facilitated through structured mechanisms for dialogue and evaluation. Periodic site visits and progress assessments by the EU delegation and project partners ensure transparency and accountability, allowing for the resolution of operational challenges and the adjustment of strategies as needed.

The financial and technical support for UFA-Reforest is derived primarily from the European Union through its broader development cooperation frameworks. Funding for the project is provided under the Multi-annual Indicative Plan (MIP) for Cameroon (2021–2027), which integrates the EPA as a foundational agreement guiding programming priorities. This indirect funding mechanism reflects the EU's preference for flexible, multi-purpose financial frameworks that accommodate a wide range of development initiatives.

Unlike dedicated and project-specific funding streams, such as those seen in the US-Peru Trade Promotion Agreement, the financial support for UFA-Reforest is embedded within a broader framework. While this approach allows for resource allocation across multiple development priorities, it also complicates the direct attribution of funding to the EPA provisions.

The predictability of funding plays a critical role in the project's sustainability. The multi-year nature of the MIP ensures that resources are available for the duration of the initiative, reducing uncertainties that could disrupt long-term planning and implementation. This stability enables consistent progress in reforestation, capacity building, and monitoring activities, reinforcing the initiative's potential to deliver lasting ecological and economic benefits.

The design and structure of the EU-Cameroon EPA shape the implementation of cooperative activities such as UFA-Reforest. As a bilateral agreement, the EPA allows for tailored provisions

that address the specific needs and priorities of the parties involved. The forestry provisions in Articles 50 and 52 demonstrate this tailored approach by explicitly promoting trade in legally sourced timber and fostering capacity building for sustainable forest management.

The specificity of these provisions provides a clear mandate for cooperative activities, creating a framework within which initiatives like UFA-Reforest can be effectively operationalized. However, the EPA's reliance on indirect funding mechanisms, as opposed to dedicated financial streams, introduces a degree of complexity in aligning project outcomes with agreement objectives.

Despite these challenges, the EPA's cooperative mechanisms, such as regular monitoring and reporting by EU delegations, serve as informal compliance measures. These processes facilitate transparency and provide opportunities to address implementation challenges in a collaborative manner. The integration of reforestation and sustainable forest management activities within the EPA framework highlights the potential of well-structured agreements to balance trade facilitation with environmental and social objectives.

4.4.3.3 Evaluation of Outputs, Outcomes, and Impacts

Outputs

The UFA-Reforest project, which began in 2022, has delivered tangible outputs that align with its primary objective of reforesting degraded areas within Forest Management Units (FMUs) in Cameroon. As of December 2024, the project has successfully planted over 120,000 trees, with an annual target of 60,000 trees (ATIBT, 2025). These reforestation activities have been concentrated in FMUs managed by Pallisco, Grumcam-Alpicam, SEEF, and SEFAC. The project has also established and maintained nurseries with a stock of high-quality seedlings, ensuring the genetic diversity and health of the planted species (ATIBT, 2025). Species such as Assamela and Iroko, known for their ecological and economic significance, have been prioritized.

Capacity-building workshops have been a critical component of the project's outputs. These sessions, conducted in collaboration with the Ministry of Forests and Fauna (MINFOF), Nature+, and the University of Liège, have trained forestry managers, local community members, and other stakeholders on advanced silvicultural techniques, sustainable forestry practices, and seed propagation methods (ATIBT, 2025). The workshops have reached at least 200 participants to date, reinforcing local capacity and fostering a shared commitment to sustainable forest management.

Monitoring systems have also been deployed to track the progress of reforestation activities. These systems include data collection on tree survival rates, growth patterns, and the health of reforested areas, providing a basis for adaptive management and continuous improvement.

Outcomes

The intermediate changes resulting from the UFA-Reforest project are beginning to manifest, particularly in governance capacity and stakeholder engagement. The project has strengthened collaboration between private forestry companies, government agencies, and local communities (European Commission, 2024). This multi-stakeholder approach has enhanced the governance of FMUs, with companies increasingly adopting practices that align with sustainable forest management standards.

There is evidence of increased community involvement in forestry activities. Local populations, who are integral to seed collection, nursery maintenance, and planting, have reported greater awareness of sustainable practices and the importance of biodiversity conservation. This heightened engagement reflects a shift in behavior among stakeholders, driven by the capacity-building efforts and inclusive governance structure of the project.

Impacts

Assessing the long-term impacts of the UFA-Reforest project presents inherent challenges, as it remains ongoing. Any observed changes in deforestation rates, biodiversity indicators, or community livelihoods cannot be solely attributed to the EU-Cameroon EPA or the project itself.

Preliminary observations suggest potential positive impacts. Reforestation activities have begun to restore degraded forest areas, contributing to increased forest cover in targeted FMUs (ATIBT, 2025). This ecological recovery may support biodiversity by providing habitat for species affected by deforestation. However, comprehensive data on these trends remains unavailable, highlighting the need for future impact assessments.

On the economic front, the project has supported local livelihoods by providing employment opportunities in seed collection, nursery management, and planting (ATIBT, 2025). While these benefits are evident in the short term, their sustainability and scale will depend on continued funding, stakeholder engagement, and the successful implementation of project activities.

From a social perspective, the project has fostered stronger relationships between communities, private companies, and government institutions (European Commission, 2024). This enhanced collaboration has the potential to contribute to long-term improvements in governance and

community well-being. However, the broader impacts of these changes will require further study and longitudinal data to fully understand.

By focusing on immediate outputs and intermediate outcomes, the UFA-Reforest project demonstrates progress toward its objectives. However, attributing long-term impacts solely to the project or the EU-Cameroon EPA requires caution due to the influence of external factors. Future evaluations, leveraging comprehensive data and triangulated evidence, will be essential to capture the full extent of the project's contributions to ecological, economic, and social sustainability.

4.5 Discussion

Across the three trade agreements examined, multiple success stories demonstrate the potential for forestry-related cooperative activities to generate tangible results. Under the US-Peru TPA, the most notable achievement is the MC-SNIFFS traceability system, which tracks timber from harvest to export (Chemonics International Inc., 2016). Its effectiveness is strengthened by OSINFOR's independent oversight, although its independent status was threatened in 2018 when the Peruvian government attempted to undermine its independence (Velut et. al, 2022). In the USMCA, the success of its forestry-related cooperative activities lies in regional collaboration and regulatory alignment, exemplified by the development of harmonized procurement guidelines for sustainably sourced timber and the innovative use of DNA barcoding to combat illegal timber trade (Commission for Environmental Cooperation, 2024c). Meanwhile, the EU-Cameroon EPA highlights a more localized approach with its UFA-Reforest initiative, prioritizing community-led reforestation and seed collection to restore degraded areas and create employment opportunities (ATIBT, 2024).

Despite their varied contexts, these case studies share a commitment towards making efforts to enhance transparency, build local capacity, and foster stakeholder trust. However, the specific paths to success differ, reflecting the unique governance structures, funding models, and institutional capacities of each agreement.

4.5.1 Enablers and innovative strategies

Several common enablers underpin these successes. First, strong institutional support has provided essential oversight and technical guidance. Second, stakeholder engagement features prominently: from community monitors in Peru to workshop-driven collaboration across USMCA countries, inclusive participation helps ground sustainability objectives in local realities. Third,

targeted funding (e.g., USAID investments in Peru, EU multi-annual financial frameworks in Cameroon) has facilitated capacity-building and technological adoption.

Innovative strategies emerged as potential best practices for other contexts. For instance, the MC-SNIFFS traceability system could be adapted to countries struggling with illegal logging, and DNA barcoding in the USMCA provides a scalable tool for species identification. The EU-Cameroon EPA's community-driven reforestation model further demonstrates how ecological restoration can be combined with socio-economic benefits, highlighting a path toward more inclusive conservation initiatives.

Yet, each innovation's impact depends on context-specific conditions, including governance capacity, financial resources, and local stakeholder dynamics. For example, the independence of OSINFOR may not easily translate to other countries, while the USMCA's regional harmonization may struggle under uneven power dynamics or competing priorities.

4.5.2 Governance structures

The USMCA relies on the CEC's regional mandate to coordinate environmental policies. While harmonized guidelines and collaborative enforcement illustrate the CEC's facilitation role, its non-binding nature restricts its power to compel compliance among member states (Jinnah & Lindsay, 2015). Resource disparities, particularly for Mexico, further complicate uniform enforcement (Laurens et al., 2022).

By contrast, the US-Peru TPA adopts a bilateral model with targeted reforms aimed at improving forestry governance. The MC-SNIFFS platform and OSINFOR's audits have somewhat enhanced transparency and enforcement in forestry concessions. However, OSINFOR's impact is limited, as its mandate does not extend to community-managed forests or informal operations, which represent a significant portion of Peru's forestry sector (Gianella et al., 2021).

In the EU-Cameroon EPA, training programs are improving compliance in designated Forest Management Units (FMUs). Still, systemic issues (corruption, limited enforcement capacity, and insufficient political will) undermine Cameroon's efforts to curb illegal logging (Nchacham et al., 2024). Regional coordination via COMIFAC attempts to address these challenges but remains hampered by structural weaknesses at the national level (Assembe-Mvondo & Ayami, 2022).

4.5.3 Funding models

Targeted funding under the US-Peru TPA (largely from USAID) enabled swift investments in governance tools like MC-SNIFFS, workshops and training programs. However, this reliance on external donors means ongoing initiatives remain vulnerable to funding fluctuations, a risk in remote regions where illegal logging is most prevalent.

In the USMCA, trilateral cost-sharing across the United States, Mexico, and Canada provides a stable baseline for regional projects states (Jinnah & Lindsay, 2015). However, resource imbalances remain a challenge, as Mexico's constrained fiscal capacity can sometimes impede uniform implementation (Laurens et al., 2022).

Within the EU-Cameroon EPA, multi-annual indicative programs and their financial frameworks fund cooperative activities like UFA-Reforest, ensuring medium-term support for reforestation and governance improvements. However, because these funds are spread across multiple countries and sectors, the impact in Cameroon would likely remain modest in scale, especially in combating widespread illegal logging.

4.6 Conclusion

This chapter provided a comprehensive analysis of forestry-related cooperative activities within the US-Peru TPA, USMCA, and EU-Cameroon EPA, focusing on their outputs, outcomes, and impacts. Collectively, these case studies affirm the potential of forestry-related cooperative activities in trade agreements to deliver tangible improvements in governance, transparency, and environmental stewardship in the forestry sector. For instance, the US-Peru TPA’s emphasis on independent oversight (OSINFOR) and traceability systems (MC-SNIFFS) has reduced illegal logging in monitored regions (Velut et al., 2022). Meanwhile, the EU-Cameroon EPA’s community-driven reforestation approach highlights how reforestation can restore degraded areas while generating socio-economic benefits for local communities.

Yet, the achievements across these agreements are tempered by funding fragility, uneven governance capacities, and exclusionary certification processes that leave smaller producers and vulnerable communities behind. The analysis shows how institutional design, funding mechanisms, and stakeholder engagement collectively shape the effectiveness of forestry provisions (Abman et al., 2021). While external donor support under the US-Peru TPA yielded rapid improvements, it also raised concerns over long-term viability. Under the USMCA, the Commission for Environmental Cooperation (CEC) fostered regional alignment, but non-binding mandates and resource disparities limited its ability to achieve equal results across all member

states. The EU-Cameroon EPA is succeeding in promoting local ownership of reforestation initiatives yet struggles with governance shortfalls and the indirect nature of Multi-annual Indicative Program financing.

By systematically examining these cooperative activities, this chapter contributes to the literature on forestry provisions in trade agreements by moving beyond their inclusion to evaluate how they are operationalized in diverse institutional and geopolitical contexts. This results-based analysis provides actionable insights for trade policymakers and practitioners, emphasizing comprehensive and independent oversight mechanisms, regionally aligned standards, and community-led approaches as valuable models for scaling up sustainable forestry practices.

Importantly, this chapter reinforces the broader objectives of this thesis by demonstrating how trade agreements serve as vehicles for integrating sustainability norms and fostering institutional collaboration in forestry governance. The findings support the hypothesis that well-designed forestry provisions, grounded in well-structured oversight systems and participatory governance models, can bridge the gap between trade liberalization and sustainable development.

The original contribution of this study lies in its results-based conceptual model, which highlights how the design of forestry provisions translates into on-the-ground actions to foster meaningful sustainability results.

Chapter 5
Conclusion

This thesis adopts an innovative approach to analyzing sustainability provisions in trade agreements, with a specific focus on the forestry sector. By addressing gaps in the literature, this study links sector-specific analysis of forestry provisions with broader discussions on sustainable trade and forestry governance. While much of the literature on trade and sustainability provisions examines overarching policy frameworks, detailed sectoral analyses remain limited (Avesani et al., 2024). Similarly, while forestry governance literature has increasingly engaged with trade-related mechanisms, studies tend to focus on regulatory frameworks and conservation strategies rather than systematically evaluating how trade agreements operationalize sustainability commitments in the forestry sector (Pacheco, 2020; Tang et al., 2020).

A central hypothesis of this thesis is that more robust, issue-linked forestry provisions correspond with stronger sustainable forestry outcomes in practice. This hypothesis has been tested through a comprehensive analysis of 51 trade agreements. This analysis reveals that agreements that integrate forestry provisions with well-designed cooperative activities can translate high-level commitments into measurable results. While prior research has shown that environmental provisions in trade agreements can influence compliance when coupled with enforcement mechanisms (Hoffmeister & Siemer, 2024; Kehoe et al., 2020), fewer studies have systematically examined the role of cooperative activities in achieving similar results. This study expands on this gap by demonstrating that well-designed cooperative mechanisms can foster compliance and implementation, even in contexts where legal enforcement is weak or non-existent.

While the USMCA and the US-Peru TPA contain legally enforceable forestry provisions subject to dispute settlement, the findings demonstrate that cooperative activities remain important for ensuring sustained implementation and compliance. However, the findings also demonstrate that even in agreements where forestry provisions are not subject to formal dispute settlement, as is the case with the EU-Cameroon EPA, cooperative activities play an important role in advancing sustainable development objectives.

The FPDCI provides a structured lens to assess the depth and coverage of forestry provisions, uncovering variability in how trade agreements address important forestry issues like sustainable forestry management, illegal logging, and deforestation. These findings are complemented by the results-based conceptual model, which evaluates the results of

cooperative activities across outputs, outcomes, and impacts. Together, these frameworks shed light on the paths through which forestry provisions influence the forestry sector, emphasizing the importance of institutional support, stakeholder engagement, and iterative learning in fostering effective implementation.

This research advances theoretical understanding by integrating norm diffusion and issue linkage theories, demonstrating their complementary roles in embedding sustainable forestry norms and aligning trade incentives with global sustainable development objectives. Norm diffusion is shown to occur not only through the text of trade agreements but also through intergovernmental mechanisms such as the USMCA's Commission on Environmental Cooperation (CEC), which facilitate dialogue, capacity-building, and the exchange of best practices. Meanwhile, issue linkage theory highlights the strategic alignment of trade benefits with sustainable development objectives, demonstrating how cooperative activities can incentivize compliance and foster collaboration among diverse stakeholders.

While this study focuses on forestry provisions, its methodologies and findings extend beyond the sector, offering valuable tools for evaluating sustainability provisions in other sectors. As mentioned earlier, the FPDCI and results-based conceptual model provide adaptable frameworks for systematically assessing the design and implementation of sustainability provisions, offering practical insights for researchers and policymakers.

By emphasizing the potential of these provisions, this thesis contributes to the growing recognition that trade agreements can serve as effective instruments for advancing sustainable development and delivering tangible results.

5.1 Contributions to Theory

This thesis makes theoretical contributions by advancing and extending the application of norm diffusion theory and issue linkage theory to analyze sustainability provisions in trade agreements.

The findings demonstrate that while enforceable provisions can facilitate norm diffusion, sustainability provisions achieve greater impact when supported by well-designed cooperative activities that translate commitments into actionable results. Existing applications of norm diffusion theory often emphasize legal mandates as the primary vehicle for embedding sustainability norms (Alger & Dauvergne, 2020; Lawless et al., 2020). This study extends this understanding by demonstrating that cooperative activities can serve as an alternative mechanism for norm adoption, particularly in cases where formal enforcement mechanisms are

weak or absent. By highlighting this pathway, the study refines norm diffusion theory in the context of trade agreements, showing that compliance incentives can emerge even in the absence of strict legal obligations.

Chapter 3 illustrates how the Forestry Provisions Depth and Coverage Index (FPDCI) captures variations in the depth and coverage of forestry provisions, providing a structured lens to assess how agreements embed sustainability norms in their design. The analysis further emphasizes the important role of institutional mechanisms in reinforcing norm diffusion. Cooperative activities, examined in Chapter 4, provide the operational means to translate commitments into measurable results. For instance, the Peru Bosques Project under the US-Peru TPA demonstrates how institutional support enables sustainability norms to be internalized and implemented at the local level.

This thesis also highlights the role of non-state actors, including civil society organizations, industry groups, and local communities, in strengthening norm adoption and fostering accountability. These actors act as intermediaries, bridging global commitments with local implementation and ensuring that sustainability norms are contextualized to regional realities. Despite their critical role, non-state actors are not explicitly incorporated into the forestry provisions of trade agreements, representing a notable gap in their design.

Issue linkage theory complements this analysis by exploring how trade agreements align economic incentives with sustainable development objectives. Forestry provisions that incorporate trade benefits, such as market access for certified sustainable forest products, create structural incentives for states to adhere to sustainability commitments. The findings from Chapter 3 show that agreements with well-designed issue linkage mechanisms incentivize collaboration and foster compliance by offering tangible benefits tied directly to adherence to sustainability goals. Chapter 4 expands on this by demonstrating how cooperative activities reinforce both norm diffusion and issue linkage mechanisms, ensuring that economic incentives do not merely exist in principle but are backed by institutional support, technical capacity, and sustained stakeholder engagement. Importantly, these findings highlight the potential for results even in contexts where provisions lack binding enforceability.

This thesis offers a significant theoretical innovation by integrating norm diffusion and issue linkage theories, demonstrating their interdependence in the context of sustainability provisions. Norm diffusion processes are strengthened when issue linkage mechanisms create clear economic incentives for compliance, while issue linkage mechanisms are more effective when sustainability norms are embedded within robust institutional frameworks. The findings highlight

that sustainability provisions achieve their greatest impact when both processes are aligned, supported by cooperative activities that translate high-level commitments into measurable sustainability

5.2 Contributions to Knowledge and Practice

Beyond its theoretical contributions, this thesis also advances both knowledge and practice by addressing gaps in the understanding and operationalization of sustainability provisions in trade agreements. By introducing novel analytical tools and drawing on empirical evidence, it provides a structured framework for evaluating how forestry provisions operate in practice.

Through the bibliometric analysis conducted in Chapter 2, this research provides a systematic assessment of the academic knowledge landscape on sustainability provisions in trade agreements. The findings reveal that while scholarship on environmental and labor provisions has expanded over time, it has historically been studied in a fragmented manner, with earlier research (Periods A and B) treating these provisions as distinct areas of inquiry. More recent studies (Period C), however, demonstrate a growing recognition of the need to examine sustainability provisions holistically, acknowledging the interconnections between environmental and labor commitments within trade agreements. Despite this shift, significant gaps remain in the integration of sector-specific analyses, particularly concerning how sustainability provisions influence their practices. Additionally, the geographic distribution of research continues to be dominated by Global North institutions, raising concerns about the representativeness of existing scholarship in the sub-field, although this may have also been influenced by the language choice of the study. By employing a dual-database approach (Web of Science and Scopus) and leveraging bibliometric techniques, this study provides a comprehensive mapping of research trends, thematic focuses, and influential contributors. The findings also provide a roadmap for addressing gaps in the literature on sustainability provisions in trade agreements.

Chapter 3 introduces the Forestry Provisions Depth and Coverage Index (FPDCI), a systematic framework for evaluating forestry provisions across four dimensions: scope, nature of commitment, intergovernmental mechanisms, and non-state actor participation. This index uncovers significant variability in how agreements address critical forestry issues, such as illegal logging, biodiversity conservation, and deforestation. The findings demonstrate that while some agreements, like the US-Peru Trade Promotion Agreement, establish detailed and enforceable commitments backed by institutional mechanisms, others like the EU-Cameroon EPA rely on non-binding, aspirational language that provides flexibility. The FPDCI enables a structured comparison of these approaches, revealing patterns in how forestry provisions are designed

across different trade agreements and regions. Additionally, the analysis highlights the relative absence of explicit provisions supporting non-state actor participation, despite the well-documented role of civil society and indigenous communities in promoting sustainable forestry governance (Libert-Amico & Larson, 2020; Lorenzini, 2022; Nath et al., 2022). By providing a replicable methodology to assess the depth and breadth of forestry commitments, the findings in this chapter advances the ability of policymakers and researchers to evaluate how trade agreements contribute to sustainable forestry management.

Building on this foundation, Chapter 4 develops and applies a results-based conceptual model to analyze forestry-related cooperative activities, focusing on their ability to translate high-level policy commitments into tangible results. By categorizing results into outputs, outcomes, and impacts, the model provides a structured framework for evaluating the effectiveness of cooperative activities. The findings demonstrate that well-designed cooperative activities, such as capacity-building programs, participatory governance initiatives, and technical assistance projects, are essential for effective implementation. For instance, the development of the MC-SNIFFS traceability system under the US-Peru TPA improved compliance monitoring and governance capacities. Similarly, the USMCA's Regional Workshop on the Evaluation of Capacities to Identify Woods in the Trade of CITES-Listed Priority Timber Species expanded regional expertise in forensic and laboratory techniques for wood identification. However, persistent challenges, such as uneven funding, limited technical capacity, and inequitable participation, highlight the need for cooperative activities that are inclusive, context-specific, and sustained over time.

From a policy perspective, this thesis highlights the importance of designing forestry provisions that are precise, adaptable, and supported by institutional mechanisms capable of facilitating cooperation and accountability. While enforceability strengthens the credibility of certain agreements, as is the case with the US-Peru TPA and the USMCA, this study demonstrates that cooperative activities play an important role in ensuring the effectiveness of sustainability provisions, particularly in agreements where formal enforcement mechanisms are absent, like the EU-Cameroon EPA.

The findings suggest that well-structured cooperative activities can bridge gaps in implementation and strengthen the operational impact of sustainability provisions, whether they are legally binding or not. This study extends existing research by systematically evaluating the conditions under which cooperative activities enhance the implementation of sustainability provisions. While prior studies have recognized the role of cooperation in trade agreements

(Adanma & Ogunbiyi, 2024; Yoo & Kim, 2016), none have provided an empirical framework to assess how these activities translate into tangible sustainability outcomes. By developing and applying the results-based conceptual model, this study offers a structured approach to evaluating the effectiveness of these cooperative mechanisms across different trade agreements.

Trade agreements with well established intergovernmental mechanisms enhance accountability and provide a stable foundation for sustained collaboration among trade partners. The findings also highlight the role of multi-stakeholder governance, which brings together civil society organizations, industry representatives, and local communities to foster inclusivity, ensure transparency, and adapt sustainability provisions to diverse contexts.

While this thesis focuses specifically on forestry provisions, its methodological contributions offer a foundation for broader applications in trade and sustainable development research. The FPDCI and results-based conceptual model provide structured approaches for the assessment of sustainability provisions, yet their applicability can be expanded through further empirical testing across different sectors. Future research could refine these tools by adapting them to account for sector-specific regulatory frameworks, enforcement mechanisms, and institutional constraints. Additionally, their integration into trade agreement negotiations and sustainability impact assessment frameworks could enhance their practical utility for policymakers and stakeholders.

5.3 Limitations and future directions

While this thesis makes significant contributions to the understanding and operationalization of sustainability provisions in trade agreements, certain limitations provide opportunities for future research to expand and refine its findings.

One notable limitation of this research is its reliance on trade agreements available in English, as well as English-language journal articles indexed in Web of Science and Scopus. The exclusion of agreements and studies published in other languages limits the scope of the analysis, as sustainability provisions embedded in non-English agreements may feature distinct design elements, implementation strategies, and enforcement mechanisms. Future research should incorporate agreements and scholarly work in multiple languages to provide a more comprehensive understanding of sustainability provisions across diverse institutional contexts.

Additionally, this study primarily focuses on trade agreements negotiated by Global North actors, such as the United States, Canada, and the European Union. While agreements like the

US-Peru Trade Promotion Agreement and the EU-Cameroon Economic Partnership Agreement include Global South partners, the broader institutional frameworks and legal structures within these agreements are still largely shaped by Global North priorities and policy approaches. Existing studies on sustainability provisions in trade agreements predominantly examine agreements involving Global North actors (Langford & Fransen, 2022; Lechner & Spilker, 2022), while South-South agreements remain underexplored. Future research should examine whether such agreements rely on different mechanisms for sustainability cooperation compared to North-South agreements.

Methodologically, this research relies on specific databases and textual analyses of trade agreements, limiting its ability to account for informal or undocumented aspects of implementation. While this approach provides structured and comparative insights, it does not capture the full scope of sustainability provisions' effects on national and local governance structures. Additionally, the reliance on publicly available documents restricts the ability to track long-term implementation dynamics. Future studies should incorporate stakeholder interviews, fieldwork, and case studies that follow implementation trajectories over time to provide a more comprehensive understanding of how sustainability provisions function in practice.

The findings of this thesis highlight promising pathways for future research. Expanding the scope of analysis to include trade agreements negotiated among Global South actors would provide a more balanced and comprehensive understanding of sustainability provisions. Given the distinct institutional, economic, and regulatory constraints in these contexts, such research could reveal alternative models for embedding sustainability provisions in trade agreements.

Additionally, longitudinal studies are essential for evaluating the sustained impacts of sustainability provisions and cooperative activities. While this thesis identifies critical pathways for translating commitments into measurable results, questions remain about the durability of these impacts over time and the conditions necessary to maintain momentum. Future research could explore how provisions and activities evolve, adapt to emerging challenges, and continue to produce sustainability results in response to shifting political and economic landscapes. Such studies could also assess whether early-stage implementation success translates into long-term systemic change, ensuring that sustainability provisions remain effective beyond their initial adoption.

By addressing these limitations and pursuing these future directions, research in this field can build on the foundations established in this thesis, contributing to a deeper and more nuanced

understanding of the role of trade agreements in advancing global sustainable development objectives.

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Appendices

Appendix 1

List of Regional Trade Agreements with sustainability provisions targeted at the Forestry Industry

RTA	In Force from
Caribbean Community and Common Market (CARICOM)	August 1, 1973
Common Market for Eastern and Southern Africa (COMESA)	December 8, 1994
East African Community (EAC)	July 7, 2000
EU - North Macedonia	June 1, 2001
EU - Lebanon	March 1, 2003
EU - Montenegro	January 1, 2008
El Salvador - Honduras - Chinese Taipei	March 1, 2008
United States - Peru	February 1, 2009
EU - Serbia	February 1, 2010
Peru - China	March 1, 2010
EU - Korea, Republic of	July 1, 2011
Peru - Korea, Republic of	August 1, 2011
EU - Eastern and Southern Africa States	May 14, 2012

EU - Colombia, Ecuador and Peru	March 1, 2013
EU - Central America	August 1, 2013
EU - Ukraine	April 23, 2014
EU - Cameroon	August 4, 2014
EFTA - Central America (Costa Rica and Panama)	August 19, 2014
EU - Moldova, Republic of	September 1, 2014
EU - Georgia	September 1, 2014
Korea, Republic of - Australia	December 12, 2014
Korea, Republic of - New Zealand	December 20, 2015
China - Korea, Republic of	December 20, 2015
Korea, Republic of - Colombia	July 15, 2016
EU - SADC	October 10, 2016
EFTA - Georgia	September 1, 2017
EU - Canada	September 21, 2017
EU - Armenia	June 1, 2018
EFTA - Philippines	June 1, 2018
Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)	December 30, 2018
EU - Japan	February 1, 2019
Chile - Indonesia	August 10, 2019
EU - Singapore	November 21, 2019
United States-Mexico-Canada Agreement (USMCA/CUSMA/T-MEC)	July 1, 2020
EU - Viet Nam	August 1, 2020
EFTA - Ecuador	November 1, 2020
United Kingdom - Eastern and Southern Africa States	January 1, 2021
United Kingdom - Moldova, Republic of	January 1, 2021
United Kingdom - Georgia	January 1, 2021
United Kingdom - Cameroon	January 1, 2021
United Kingdom - Japan	January 1, 2021
United Kingdom - SACU and Mozambique	January 1, 2021
United Kingdom - Canada	January 1, 2021
EU - United Kingdom	January 1, 2021
United Kingdom - Ukraine	January 1, 2021
EFTA - Indonesia	November 1, 2021
United Kingdom - Iceland, Liechtenstein and Norway	December 1, 2021
India - United Arab Emirates	May 1, 2022
Indonesia - Korea, Republic of	January 1, 2023
United Kingdom - New Zealand	May 31, 2023
United Kingdom - Australia	May 31, 2023

Appendix 2

Forestry Provisions Depth and Coverage Index

RTA Name	Date	Scope of Provisions	Nature of Commitment	Intergovernmental Mechanisms	Participation of Non state Actors	Score
United States - Peru	February 1, 2009	0.3810	1.0000	1.0000	1	0.8452
Peru - China	March 1, 2010	0.3333	0.6667	0.6667	1	0.6667
Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)	December 30, 2018	0.1429	0.6667	0.6667	1	0.6191
EU - Colombia, Ecuador and Peru	March 1, 2013	0.2381	0.6667	0.5000	1	0.6012
United Kingdom - New Zealand	May 31, 2023	0.3810	0.6667	0.3333	1	0.5952
Caribbean Community and Common Market (CARICOM)	August 1, 1973	0.3333	0.6667	0.3333	1	0.5833
United Kingdom - Iceland, Liechtenstein and Norway	December 1, 2021	0.3810	0.6667	0.6667	0	0.4286
EU - Armenia	June 1, 2018	0.3333	0.6667	0.6667	0	0.4167
EU - Moldova, Republic of	September 1, 2014	0.4286	0.6667	0.5000	0	0.3988
United Kingdom - Moldova, Republic of	January 1, 2021	0.4286	0.6667	0.5000	0	0.3988

Common Market for Eastern and Southern Africa (COMESA)	December 8, 1994	0.1905	0.6667	0.6667	0	0.3810
Peru - Korea, Republic of	August 1, 2011	0.3333	0.6667	0.5000	0	0.3750
EU - Central America	August 1, 2013	0.4762	0.6667	0.3333	0	0.3691
East African Community (EAC)	July 7, 2000	0.2857	0.6667	0.5000	0	0.3631
United Kingdom - Georgia	January 1, 2021	0.2857	0.6667	0.5000	0	0.3631
EU - Georgia	September 1, 2014	0.2857	0.6667	0.5000	0	0.3631
EU - Canada	September 21, 2017	0.2381	0.6667	0.5000	0	0.3512
EU - Viet Nam	August 1, 2020	0.2381	0.6667	0.5000	0	0.3512
United Kingdom - Canada	January 1, 2021	0.2381	0.6667	0.5000	0	0.3512
EFTA - Indonesia	November 1, 2021	0.3810	0.6667	0.3333	0	0.3452
Korea, Republic of - New Zealand	December 20, 2015	0.3810	0.6667	0.3333	0	0.3452
EU - Cameroon	August 4, 2014	0.1905	0.6667	0.5000	0	0.3393
United Kingdom - Cameroon	January 1, 2021	0.1905	0.6667	0.5000	0	0.3393
China - Korea, Republic of	December 20, 2015	0.3333	0.6667	0.3333	0	0.3333
United States-Mexico-Canada Agreement (USMCA/CUSMA/T-MEC)	July 1, 2020	0.3333	0.6667	0.3333	0	0.3333

EU - Singapore	November 21, 2019	0.2857	0.6667	0.3333	0	0.3214
United Kingdom - Japan	January 1, 2021	0.2381	0.6667	0.3333	0	0.3095
EU - Japan	February 1, 2019	0.2381	0.6667	0.3333	0	0.3095
United Kingdom - Australia	May 31, 2023	0.2381	0.6667	0.3333	0	0.3095
Korea, Republic of - Australia	December 12, 2014	0.3810	0.6667	0.1667	0	0.3036
EFTA - Central America (Costa Rica and Panama)	August 19, 2014	0.3333	0.6667	0.1667	0	0.2917
EFTA - Ecuador	November 1, 2020	0.3333	0.6667	0.1667	0	0.2917
EFTA - Georgia	September 1, 2017	0.3333	0.6667	0.1667	0	0.2917
EFTA - Philippines	June 1, 2018	0.3333	0.6667	0.1667	0	0.2917
United Kingdom - SACU and Mozambique	January 1, 2021	0.1429	0.6667	0.3333	0	0.2857
El Salvador - Honduras - Chinese Taipei	March 1, 2008	0.0476	0.3333	0.6667	0	0.2619
EU - Lebanon	March 1, 2003	0.1905	0.6667	0.1667	0	0.2560
EU - United Kingdom	January 1, 2021	0.2381	0.6667	0.0000	0	0.2262
Korea, Republic of - Colombia	July 15, 2016	0.2381	0.6667	0.0000	0	0.2262
EU - Eastern and Southern Africa States	May 14, 2012	0.1429	0.3333	0.1667	0	0.1607
EU - Ukraine	April 23, 2014	0.1429	0.3333	0.1667	0	0.1607

United Kingdom - Eastern and Southern Africa States	January 1, 2021	0.1429	0.3333	0.1667	0	0.1607
United Kingdom - Ukraine	January 1, 2021	0.1429	0.3333	0.1667	0	0.1607
Chile - Indonesia	August 10, 2019	0.0952	0.3333	0.1667	0	0.1488
EU - Korea, Republic of	July 1, 2011	0.0952	0.3333	0.1667	0	0.1488
EU - North Macedonia	June 1, 2001	0.0952	0.3333	0.1667	0	0.1488
EU - Montenegro	January 1, 2008	0.0476	0.3333	0.1667	0	0.1369
EU - SADC	October 10, 2016	0.0476	0.3333	0.1667	0	0.1369
EU - Serbia	February 1, 2010	0.0476	0.3333	0.1667	0	0.1369
Indonesia - Korea, Republic of	January 1, 2023	0.0476	0.3333	0.1667	0	0.1369
India - United Arab Emirates	May 1, 2022	0.0000	0.3333	0.1667	0	0.1250

Appendix 3

Table of Forestry Provisions

RTA	Text	Location	In Force from
Caribbean Community and Common Market (CARICOM)	1. The Community shall, in collaboration with competent national, regional and international agencies and organisations, promote the development, management and conservation of the forest resources in the Member States on a sustainable basis. 2. The Community shall effect the promotion and facilitation referred to in paragraph 1 by formulating policies and programmes for: (a) the management of its forest resources; (b) the integration of forest development in rural communities;(c) enhancing the institutional capabilities of the Member States to design and implement forest management systems; (d) establishing, facilitating and strengthening programmes for research and for human resource development at the professional, technical and vocational levels; (e) encouraging public and private sector participation in the development and application of technology; (f) providing incentives for forestry development to stimulate domestic, regional and foreign investment in the forestry sub-sector; (g) harmonising standards for quality assurance, compatible with international specifications; (h) promoting commercialisation of natural forest products in a sustainable manner; and (i) undertaking national forest inventories.	Article 61	August 1, 1973
Chile - Indonesia	Taking into account their national priorities and available resources, the Parties shall explore and jointly decide areas of cooperation of mutual interest and benefit. These areas may include, but are not limited to: (l) promote sustainable forest management and trade in legally obtained forest products	Article 9.5.6 (l)	August 10, 2019

China - Korea, Republic of	2. The Parties shall endeavor to cooperate in the field of forestry. Such cooperation may include, but is not limited to, the following: (a) development, utilization, and sustainable management of forest resources; (b) cooperation on the conservation of natural ecosystem and restoration of rare or endangered species; (c) facilitating the cooperation on addressing problems regarding illegal logging and the common understanding on timber legality verification; (d) strengthening the exchange and cooperation on the storage techniques of forest germplasm resources; (e) promoting the development of the woody ornamental plants, tree seed and treeseedling industries; and (f) other fields of forestry which may be agreed through discussions by the Parties.	Article 17.7	December 20, 2015

Common Market for Eastern and Southern Africa (COMESA)	1. The Member States agree to take concerted measures to foster co-operation in the joint and efficient management and sustainable utilisation of natural resources within the Common Market for the mutual benefit of the Member States. In particular, the Member States shall: (c) adopt common regulations for the preservation of shared land, marine and forestry resources. 2. The Member States agree to take necessary measures to conserve and manage forests, through the: (a) adoption of common policies for the conservation and management of natural forests, industrial plantations and nature reserves;(b) exchange of information on natural forests and industrial plantations development and management; (c) joint promotion of a common forestry practice within the Common Market; (d) joint utilisation of forestry training and research facilities; (e) adoption of common regulations for the preservation and management of all catchment forests within the Common Market; and (f) the establishment of uniform regulations for the utilisation of forestry resources in order to reduce the depletion of the natural forests and avoid desertification within the Common Market.	Article 123	December 8, 1994

Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)	The Parties recognise that each Party's actions to transition to a low emissions economy should reflect domestic circumstances and capabilities and, consistent with Article 20.12 (Cooperation Frameworks), 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./// Maintain or strengthen government capacity and institutional frameworks to promote sustainable forest management and wild fauna and flora conservation, and endeavour to enhance public participation and transparency in these institutional frameworks;	Article 20.15.2; Article 20.17.4 (b)	December 30, 2018

East African Community (EAC)	Action by the Community relating to the environment shall have the following objectives: (c)to ensure sustainable utilisation of natural resources like lakes, wetlands, forests and other aquatic and terrestrial ecosystems;/// For purposes of paragraph 1 of this Article, the Partner States undertake to: (e) adopt environmentally sound management techniques for the control of land degradation, such as soil erosion, desertification and forest encroachment; (m) promote enhancement of the quality of the environment through adoption of common measures and programmes of tree planting, afforestation and reforestation, soil conservation and recycling of materials; and/// 2. For purposes of paragraph 1 of this Article, the Partner States: (a) with regard to the conservation and management of forests, agree to take necessary measures through: (i) the adoption of common policies for, and the exchange of information on, the development, conservation and management of natural forests, commercial plantations and natural reserves;(ii) the joint promotion of common forestry practices within the Community; (iii) the joint utilisation of forestry training and research facilities; (iv) the adoption of common regulations for the conservation and management of all catchment forests within the Community; (v) the establishment of uniform regulations for the utilisation of forestry resources in order to reduce the depletion of natural forests and avoid desertification within the Community; and (vi) the establishment of Api-Agro Forestry Systems.	Chapter 19; Article 111/// Chapter 19; Article 112/// Chapter 19; Article 114	July 7, 2000
EFTA - Central America (Costa Rica and Panama)	1. In order to promote the sustainable management of forest resources and thereby, inter alia, reduce greenhouse emissions from deforestation and degradation of natural forests related to activities beyond the forest sector, the Parties commit to work together in the relevant multilateral fora in which they participate to improve forest law enforcement and governance and to promote trade in legal and sustainable forest-based products. 2. Useful instruments to achieve this objective may include,	Article 9.8	August 19, 2014

	inter alia, effective use of Convention on International Trade in Endangered Species of Wild Fauna and Flora (“CITES”) with regard to endangered timber species; certification schemes for sustainably harvested forest products; regional or bilateral Forest Law Enforcement Governance and Trade (“FLEGT”) Voluntary Partnership Agreements.		
EFTA - Ecuador	1. The Parties recognise the importance of effective forest law and governance in order to ensure sustainable forest management and thereby contribute to the reduction of greenhouse gas emissions and biodiversity loss resulting from deforestation and degradation of natural forest and peatlands including from land-use change for economic activities. 2. With the aim of contributing to sustainable forest management, the Parties commit to promote trade in goods which derive from sustainably managed forests. To this end, the Parties undertake to, inter alia: (a) promote the effective use of CITES with regard to endangered timber species; (b) promote the development and use of certification schemes for forest products from sustainably managed forests; (c) combat illegal logging by improving forest law enforcement and governance and by ensuring that only legally sourced timber is traded among the Parties; and (d) cooperate on issues relating to sustainable forest management through existing bilateral arrangements if applicable and in the relevant multilateral fora in which they participate, in particular in Reducing Emissions from Deforestation and Forest Degradation (REDD+) as encouraged by the Paris Agreement.	Article 8.10	November 1, 2020

EFTA - Georgia	1. In order to promote the sustainable management of forest resources and thereby, inter alia, reduce greenhouse emissions from deforestation and degradation of natural forests and peat lands related to activities in and beyond the forest sector, the Parties commit to work together in the relevant multilateral fora in which they participate and through existing bilateral cooperation if applicable to improve enforcement of domestic forest legislation and governance and to promote trade in legal and sustainable forestbased, agricultural and mining products. 2. Useful instruments to achieve this objective may include, inter alia, the promotion of listing of timber species under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) with regard to endangered timber species, certification schemes for sustainably harvested forest products, regional or bilateral Forest Law Enforcement Governance and Trade (FLEGT) Voluntary Partnership Agreements.		September 1, 2017

EFTA - Indonesia	1. The Parties recognise the importance of effective law and governance in order to ensure sustainable management of forests and peatlands and thereby contribute to the reduction of greenhouse gas emissions and biodiversity loss resulting from deforestation and degradation of natural forests and peatlands, including from land-use change. 2. With the aim of contributing to sustainable management of forests and peatlands, including through the promotion of trade in products that derive from sustainably managed forests, the Parties undertake to, inter alia: (a) promote the effective use of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); (b) promote the development and use of certification schemes for forest-related products from sustainably managed forests; (c) promote the effective implementation and use of legality assurance system for timber as required in Forest Law Enforcement Governance and Trade Voluntary Partnership Agreement and corresponding schemes, with the aim to combat illegal logging and eliminate trade of illegal timber products; and (d) exchange information on trade-related initiatives on forest governance, including measures to combat illegal logging and measures to exclude illegally harvested timber and timber products from trade flows. 3. The Parties agree to cooperate on issues pertaining to sustainable management of forests and peatlands through bilateral arrangements if applicable and in the relevant multilateral fora in which they participate, in particular the United Nations collaborative initiative on Reducing Emissions from Deforestation and Forest Degradation as emphasised in the Paris Agreement./// 2. With a view to ensuring economically, environmentally and socially beneficial and sound management and operation of the vegetable oils sector, the Parties commit to, inter alia: (a) effectively apply laws, policies and practices aiming at	Article 8.8/// Article 8.10	November 1, 2021

	protecting primary forests, peatlands, and related ecosystems, halting deforestation, peat drainage and fire clearing in land preparation, reducing air and water pollution, and respecting rights of local and indigenous communities and workers;		
EFTA - Philippines	1. In order to promote the sustainable management of forest resources and thereby, inter alia, reduce greenhouse emissions from deforestation and degradation of natural forests and peat lands related to activities beyond the forest sector, the Parties will work together in the relevant multilateral fora in which they participate and through existing bilateral cooperation if applicable to improve forest law enforcement and governance and to promote trade in legal and sustainable forest-based, agricultural and mining products. 2. Useful instruments to achieve this objective may include,	Article 11.8	June 1, 2018

	inter alia, effective use of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) with regard to endangered timber species, certification schemes for sustainably harvested forest products, bilateral Forest Law Enforcement Governance and Trade (FLEGT) Voluntary Partnership Agreements.		
El Salvador - Honduras - Chinese Taipei	1.The objective of the cooperation in this field is to support and promote strategies, actions, and policy measures in the areas of agriculture, forestry, aquaculture, and fishing and animal and plant health inspection, that allow the consolidation of the efforts of the Parties in the achievement of extensive rural development. 2.Each Party could facilitate the other Parties, in providing counseling, information and technical cooperation, in terms and conditions mutually agreed, to strengthen the communication of the application, administration and regulation of the sanitary and phytosanitary measures, as well as the procedures and systems on these matters. 3.For the purposes of this Article, the Parties will make efforts in the following areas, but not limited thereto: (a)diversification, adjustment, and improvement of the competitiveness of the agricultural, aquaculture, forestry, and fishing subsectors; (b)mutual information exchanges, including reference to the development of policies in farming, forestry, animal and plant health inspection;	Article 17.11.1 - 3 (a) (b)	March 1, 2008

EU - Armenia	Cooperation shall aim at preserving, protecting, improving and rehabilitating the quality of the environment, protecting human health, utilising natural resources in a sustainable manner and promoting measures at international level to address regional or global environmental problems, including in the areas of:(e) nature protection, including forestry and conservation of biological diversity;/// The cooperation shall cover, inter alia, the following objectives:(b) the development of sector-specific strategies for the Republic of Armenia (including clearly defined timetables and milestones for implementation, administrative responsibilities, as well as financing strategies for investments in infrastructure and technology) on:(iv) biodiversity, nature conservation and forestry;/// 1.The Parties recognise the importance of ensuring the conservation and sustainable management of forests and the contribution of forests to the Parties' economic, environmental and social objectives. 2.To that end, the Parties shall: (a)promote trade in forest products derived from sustainably managed forests, harvested in accordance with the domestic legislation of the country of harvest; (b)exchange information on measures to promote consumption of timber and timber products from sustainably managed forests and, where relevant, cooperate to develop such measures; (c)adopt measures to promote the conservation of forest cover and combat illegal logging and related trade, including with respect to third countries, as appropriate; (d)exchange information on actions to improve forest governance and, where relevant, cooperate to maximise the impact and ensure the mutual supportiveness of their respective policies aiming at excluding illegally harvested timber and timber products from trade flows; (e)promote the inclusion in the Appendices to the CITES of timber species which meet the CITES criteria agreed for such	Article 46/// Article 48///Article 278/// Article 284	June 1, 2018

	inclusion; and (f)cooperate at the regional and global levels with the aim of promoting the conservation of forest cover and the sustainable management of all types of forests, with use of certification promoting responsible management of the forests./// 1.The Parties recognise the importance of working together on trade-related aspects of environmental and labour policies in order to achieve the objectives of this Agreement. They may cooperate in, inter alia, the following areas:(l) trade-related measures to promote the conservation and sustainable management of forests, thereby reducing deforestation, including with regard to illegal logging;		

EU - Cameroon	1. The Parties shall work together to facilitate trade between the EC Party and the Central Africa Party in timber and forest products which come from objectively verifiable legal sources and help to achieve sustainable development. The Parties agree to: (a) implement measures to increase market confidence regarding the origin of forest products, particularly their legal and/ or sustainable origin. These measures may include systems to improve the traceability of timber and forest products sold both within Central Africa and between the Central Africa Party and the EC Party; (b) put in place an audit and surveillance system that is independent of the control chain. 2. The Parties shall explore possible ways of improving commercial opportunities for timber and forest products with a legal or sustainable origin in Central Africa on the market of the EC Party. These measures may include, inter alia, stronger public procurement policies, measures to raise consumer awareness, measures to promote the processing of forest products in Central Africa, and activities and initiatives in association with private-sector operators./// In accordance with the provisions of Article 7, the Parties agree to cooperate in the following areas inter alia: (a) facilitating assistance with a view to strengthening regional integration, for example the implementation of the Treaty on the Conservation and Sustainable Management of Forests in Central Africa (COMIFAC) and the Sub-regional Convergence Plan, and with a view to building capacity in order to fulfil the commitments set out in this Chapter; (b) supporting public and private commercial initiatives, particularly in terms of exports to the market of the EC Party, for local processing of timber and forest products originating in Central Africa which come from objectively	Article 50 /// Article 52	August 4, 2014

	verifiable legal sources and help to achieve sustainable development.		

EU - Canada	1.The Parties recognise the importance of the conservation and sustainable management of forests for providing environmental functions and economic and social opportunities for present and future generations, and of market access for forest products harvested in accordance with the law of the country of harvest and from sustainably managed forests.2.To this end, and in a manner consistent with their international obligations, the Parties undertake to: (a) encourage trade in forest products from sustainably managed forests and harvested in accordance with the law of the country of harvest; (b) exchange information, and if appropriate, cooperate on initiatives to promote sustainable forest management, including initiatives designed to combat illegal logging and related trade; (c) promote the effective use of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, done at Washington on 3 March 1973, with regard to timber species considered at risk; and (d) cooperate, where appropriate, in international fora that deal with the conservation and sustainable management of forests. 3.The Parties shall discuss the subjects referred to in paragraph 2, in the Committee on Trade and Sustainable Development or in the Bilateral Dialogue on Forest Products referred to in Chapter Twenty-Five (Bilateral Dialogues and Cooperation), in accordance with their respective spheres of competence. /// 1.The Parties agree that bilateral dialogue, cooperation and exchange of information and views on relevant laws, regulations, policies and issues of importance to the production, trade, and consumption of forest products are of mutual interest. The Parties agree to carry out this dialogue, cooperation and exchange in the Bilateral Dialogue on Forest Products, including: (a) the development, adoption and implementation of relevant laws, regulations, policies and standards, and testing, certification and accreditation requirements and their potential impact on trade in forest products between the Parties; (b) initiatives of the Parties related to the sustainable management of forests and forest governance; (c) mechanisms to assure the	Article 24.10 /// Article 25.3	September 21, 2017

	legal or sustainable origin of forest products; (d) access for forest products to the Parties or other markets; (e) perspectives on multilateral and plurilateral organisations and processes in which they participate, which seek to promote sustainable forest management or combat illegal logging; (f) issues referred to in Article 24.10 (Trade in forest products); and (g) any other issue related to forest products as agreed upon by the Parties. 2.The Bilateral Dialogue on Forest Products shall meet within the first year of the entry into force of this Agreement, and thereafter in accordance with Article 25.1.2. 3.The Parties agree that discussions taking place in the Bilateral Dialogue on Forest Products can inform discussions in the Committee on Trade and Sustainable Development.		

EU - Central America	1. The Parties shall promote a dialogue in the areas of environment and sustainable development by exchanging information and encouraging initiatives on local and global environmental issues, recognising the principle of shared but differentiated responsibilities, as set forth in the 1992 Rio Declaration on Environment and Development. 2. This dialogue shall be aimed, inter alia, at fighting the threat of climate change, biodiversity conservation, the protection and sustainable management of forests to, inter alia, reduce emissions from deforestation and forest degradation, the protection of hydro and marine resources, basins and wetlands, the research and development of alternative fuels and renewable energy technologies and the reform of environmental governance in view of increasing its efficiency./// 3. Cooperation shall in particular address: (a) the protection and sustainable management of natural resources and ecosystems, including forests and fisheries;(c) global issues such as climate change, depletion of the ozone layer, desertification, deforestation, conservation of biodiversity and biosafety;/// In order to promote the sustainable management of forest resources, the Parties commit to work together to improve forest law enforcement and governance and to promote trade in legal and sustainable forest products through instruments that may include, inter alia: effective use of CITES with regard to endangered timber species; certification schemes for sustainably harvested forest products; regional or bilateral Forest Law Enforcement Governance and Trade ("FLEGT") Voluntary Partnership Agreements.	Article 20/// Article 50///Article 289	August 1, 2013

EU - Colombia, Ecuador and Peru	In order to promote the sustainable management of forest resources, the Parties recognise the importance of having practices that, in accordance with domestic legislation and procedures, improve forest law enforcement and governance and promote trade in legal and sustainable forest products, which may include the following practices: (a) the effective implementation and use of CITES with regard to timber species that may be identified as endangered, in accordance with the criteria of and in the framework of such Convention; (b) the development of systems and mechanisms that allow verification of the legal origin of timber products throughout the marketing chain; (c) the promotion of voluntary mechanisms for forest certification that are recognised in international markets; (d) transparency and the promotion of public participation in the management of forest resources for timber production; and (e) the strengthening of control mechanisms for timber production, including through independent supervision institutions, in accordance with the legal framework of each Party./// Taking into account the cooperative approach of this Title as well as the provisions of Title XIII (Technical Assistance and Trade-Capacity Building), the Parties recognise the importance of cooperation activities that contribute to the implementation and better use of this Title and, in particular, to the improvement of policies and practices related to labour and environmental protection as set out in its provisions. Such cooperation activities should cover activities in areas of mutual interest, such as:(d) activities related to the adaptation to, and mitigation of, climate change, including activities related to the reduction of emissions from deforestation and forest degradation ('REDD');g) activities related to the determination of the legal origin of forest products, voluntary forestry certification schemes and traceability of different forestry products;(h) activities to	Article 273/// Article 286	March 1, 2013

	encourage best practices for sustainable forest management;		

EU - Eastern and Southern Africa States	Subject to the provisions of Article 36, the Parties agree to cooperate, including by facilitating support, in the following areas: C) sustainable utilisation of biodiversity, forestry and wildlife resources; n) integration of local communities in the management of biodiversity, forestry and wildlife resources; p)sustainable management of forests and similar mechanisms.	Article 51.2 c, n and p	May 14, 2012
EU - Georgia	1. The Parties recognise the importance of ensuring the conservation and the sustainable management of forests and of forests' contribution to the Parties' economic, environmental and social objectives. 2. To that end, the Parties commit to: (a) promoting trade in forest products derived from sustainably managed forests, harvested in accordance with the domestic legislation of the country of harvest, which could include bilateral or regional agreements to that end; (b) exchanging information on measures to promote the consumption of timber and timber products from sustainably managed forests and, where relevant, cooperate to developing such measures; (c) adopting measures to promote the conservation of forest cover and combat illegal logging and related trade, including with respect to third countries, as appropriate; (d) exchanging information on actions for improving forest governance and where relevant cooperating to maximise the impact and ensure the mutual supportiveness of their respective policies aiming at excluding illegally harvested timber and timber products from trade flows;(e) promoting the listing of timber species under CITES where the conservation status of those species is considered at risk; and (f) cooperating at the regional and the global levels with the aim of promoting the conservation of forest cover and the sustainable management of all types of forests./// The Parties recognise the importance of working together on trade-related aspects of environmental and labour policies in order to	Article 233/// Article 239/// Article 302	September 1, 2014

	achieve the objectives of Title IV (Trade and Trade-related Matters) of this Agreement. They may cooperate in, inter alia, the following areas:(l) trade-related measures to promote the conservation and sustainable management of forests, thereby reducing pressure on deforestation including with regard to illegal logging; and/// 1. Cooperation shall aim at preserving, protecting, improving and rehabilitating the quality of the environment, protecting human health, sustainable utilisation of natural resources and promoting measures at international level to deal with regional or global environmental problems, including in the areas of:(e) nature protection, including forestry and conservation of biological diversity;		

EU - Japan	1.The Parties recognise the importance and the role of trade and investment in ensuring the conservation and sustainable management of forests. 2.In that context, the Parties shall: (a)encourage conservation and sustainable management of forests, and trade in timber and timber products harvested in accordance with the laws and regulations of the country of harvest; (b)contribute to combating illegal logging and related trade including, as appropriate, the trade with third countries; and (c)exchange information and share experiences at bilateral and multilateral levels with a view to promoting the conservation and sustainable management of forests and trade in legally harvested timber and timber products, as well as to combating illegal logging./// Recognising the importance of cooperation on trade-related and investment-related aspects of environmental and labour policies in order to achieve the objectives of this Agreement, the Parties may, inter alia:(j) cooperate to promote the conservation and sustainable management of forests and trade in legally harvested timber and timber products, as well as to combat illegal logging; and	Article 16.7/// Article 16.12	February 1, 2019
EU - Korea, Republic of	In order to promote the achievement of the objectives of Chapter Thirteen and to assist in the fulfilment of their obligations pursuant to it, the Parties have established the following indicative list of areas of cooperation: (i) cooperation on trade-related measures to tackle the deforestation including by addressing problems regarding illegal logging;	Annex 13.1 (i)	July 1, 2011
EU - Lebanon	The aims of cooperation shall be: (l) to develop the forestry sector, especially in the fields of reafforestation, forest fire prevention, forest pasture and combating desertification;	Article 51 (l)	March 1, 2003

EU - Moldova, Republic of	1.The Parties recognise the importance of ensuring the conservation and the sustainable management of forests and of forests' contribution to the Parties' economic, environmental and social objectives. 2.To that end, the Parties commit to: (a) promoting trade in forest products derived from sustainably managed forests, harvested in accordance with the domestic legislation of the country of harvest. Actions, in that regard, may include the conclusion of a Forest Law Enforcement Governance and Trade Voluntary Partnership Agreement; (b) exchanging information on measures to promote the consumption of timber and timber products from sustainably managed forests and, where relevant, cooperate in the development of such measures; (c) adopting measures to promote the conservation of forest cover and to combat illegal logging and related trade, including with respect to third countries, as appropriate; (d) exchanging information on actions for improving forest governance and, where relevant, cooperating to maximise the impact and ensure the mutual supportiveness of their respective policies aiming at excluding illegally harvested timber and timber products from trade flows; (e) promoting the listing of timber species under CITES where the conservation status of that species is considered at risk; and (f) cooperating at the regional and global level with the aim of promoting the conservation of forest cover and the sustainable management of all types of forests, with use of certification promoting responsible management of the forests. /// The Parties recognise the importance of working together on trade-related aspects of environmental and labour policies in order to achieve the objectives of Title V (Trade and Trade-related Matters) of this Agreement. They may cooperate in, inter alia, the following areas:(l) trade-related measures to tackle deforestation, including by addressing problems regarding illegal logging;	Article 369/// Article 375	September 1, 2014

EU - Montenegro	Cooperation between the Parties shall be developed in all priority areas related to the Community acquis in the field of agriculture, as well as veterinary and phytosanitary domains. Cooperation shall notably aim at modernising and restructuring the agriculture and agro-industrial sector, in particular to reach community sanitary requirements, to improve water management and rural development as well as to develop the forestry sector in Montenegro and at supporting the gradual approximation of Montenegrin legislation and practices to the Community rules and standards.	Article 97	January 1, 2008
EU - North Macedonia	Cooperation in this field shall have as its aim the modernisation and restructuring of agriculture and the agro-industrial sector, water management, rural development, the gradual harmonisation of veterinary and phytosanitary legislation with Community standards and the development of fishery and forestry sectors in the former Yugoslav Republic of Macedonia./// Cooperation could centre on the following priorities: the protection of forests, the flora and fauna; the conservation of bio-diversity,	Article 100; Article 103	June 1, 2001
EU - SADC	1.The Parties recognise the importance of working together on trade related aspects of environmental and labour policies in order to achieve the objectives of this Agreement. 2.The Parties may exchange information and share experience on their actions to promote coherence and mutual supportiveness between trade, social and environmental objectives, and shall strengthen dialogue and cooperation on sustainable development issues that may arise in the context of trade relations. 3.In respect of paragraphs 1 and 2, the Parties may cooperate, inter alia, in the following areas: (e) trade aspects of sustainable forest management;	Article 11.3 (e)	October 10, 2016

EU - Serbia	Cooperation between the Parties shall be developed in all priority areas related to the Community acquis in the field of agriculture, as well as veterinary and phytosanitary domains. Cooperation shall notably aim at modernising and restructuring the agriculture and agro-industrial sector, in particular to reach community sanitary requirements, to improve water management and rural development as well as to develop the forestry sector in Serbia and at supporting the gradual approximation of Serbian legislation and practices to the Community rules and standards.	Article 97	February 1, 2010
EU - Singapore	The Parties recognise the importance of the global conservation and sustainable management of forests. To that end, the Parties undertake to: (a)exchange information on approaches to promote the trade in, and the consumption of, timber and timber products from legally and sustainably managed forests, and to promote the awareness of such approaches; (b)promote global forest law enforcement and governance and to address trade in illegally harvested timber and timber products through, for example, promoting the use of timber and timber products from legally and sustainably managed forests, including through verification and certification schemes; (c)cooperate to promote the effectiveness of measures or policies aimed at addressing the trade in illegally harvested timber and timber products; and (d)promote the effective use of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) with regard to timber species whose conservation status is considered at risk. /// The Parties recognise the importance of working together on trade-related aspects of environmental policies in order to achieve the objectives of this Agreement. The Parties may initiate cooperative activities of mutual benefit in areas including, but not limited to:(h) cooperation on sustainable forest management to encourage effective measures for certification of sustainably produced timber;	Article 12.7/// Article 12.10	November 21, 2019

EU - Ukraine	In order to promote the sustainable management of forest resources, Parties commit to work together to improve forest law enforcement and governance and promote trade in legal and sustainable forest products.	Article 294	April 23, 2014
EU - United Kingdom	1. The Parties recognise the importance of conservation and sustainable forest management for providing environmental functions and economic and social opportunities for present and future generations, and the role of trade in pursuing that objective.2. In light of paragraph 1 and in a manner consistent with its international obligations, each Party shall: (a) continue to implement measures to combat illegal logging and related trade, including with respect to third countries, as appropriate, and to promote trade in legally harvested forest products; (b) promote the conservation and sustainable management of forests and trade and consumption of timber and timber products harvested in accordance with the law of the country of harvest and from sustainably managed forests; and (c) exchange information with the other Party on trade-related initiatives on sustainable forest management, forest governance and on the conservation of forest cover and cooperate to maximise the impact and mutual supportiveness of their respective policies of mutual interest. 3. The Parties shall work together to strengthen their cooperation on trade-related aspects of sustainable forest management, the conservation of forest cover and illegal logging, including in multilateral fora, as appropriate.	Article 403	January 1, 2021

EU - Viet Nam	1. The Parties recognise the importance of ensuring the conservation and sustainable management of forest resources in contributing to their economic, environmental and social objectives. 2. To this end, each Party shall: (a) encourage the promotion of trade in forest products from sustainably managed forests and harvested in accordance with the domestic legislation of the country of harvest; this may include the conclusion of the Forest Law Enforcement Governance and Trade ("FLEGT") Voluntary Partnership Agreement; (b) exchange information with the other Party on measures to promote consumption of timber and timber products from sustainably managed forests and, where relevant, cooperate to develop such measures; (c) adopt measures which are consistent with domestic laws and international treaties to which it is a party, to promote the conservation of forest resources and combat illegal logging and related trade; (d) exchange information with the other Party on actions, as appropriate, to improve forest law enforcement and, where relevant, cooperate to maximise the impact and ensure the mutual supportiveness of their respective policies aiming at excluding illegally harvested timber and timber products from trade flows; and (e) cooperate with the other Party at regional and global levels, as appropriate, with the aim of promoting the conservation and sustainable management of all types of forests. /// 1. The Parties, recognising the importance of working together on trade-related aspects of sustainable development in order to achieve the objectives of this Chapter, may work together in, inter alia, the following areas:(k) trade-related measures to promote the conservation and sustainable management of forests with a view to reducing deforestation and illegal logging;	Article 13.8/// Article 13.14	August 1, 2020
India - United Arab Emirates	Economic cooperation under this Chapter shall initially focus on the following areas: (b)agriculture, forestry and fisheries;	Article 14.2.2 (b)	May 1, 2022

Indonesia - Korea, Republic of	Sectors related to agriculture, fishery and forestry may include: (a) livestock and crop production; (b) improvement of investment conditions in the fields of fisheries and forestry; (c) satisfying the needs of investors in fisheries and forestry sectors in accordance with each Party's relevant domestic laws and regulations; (d) forest management; (e) agro-based and food processing; and (f) other sectors of cooperation as may be agreed by the Parties.	Article 8.2.3	January 1, 2023
Korea, Republic of - Australia	The Parties, recognising the current high level of bilateral cooperation in the field of forestry, shall endeavour to explore opportunities for further cooperation. Areas of cooperation may include: (a) promotion of trade in timber resources including logs and woodchips; (b) development, utilisation and sustainable management of forest resources; (c) the impact of climate change on forestry resources; (d) forest fire management and control; (e) forest thinning; (f) forestry pest control; (g) farm forestry; (h) combating illegal logging and the associated trade; and (i) any other areas of cooperation as may be identified and agreed by the Parties.	Article 16.7	December 12, 2014
Korea, Republic of - Colombia	2. The Parties will encourage and facilitate cooperation in, as appropriate, including but not limited to, the following activities: (a) implementation of sustainable forest management, including the development of related indicators; (c) forest protection, including the prevention and control of forest fires, diseases, and insect pests; (d) promotion of joint measures to limit or reduce the adverse effects of climate change;(g) development of eco-forestry technology and conservation of forest ecosystems;	Article 17.5	July 15, 2016

Korea, Republic of - New Zealand	The Parties, recognising that mutually beneficial co-operation and a strong trade relationship will enhance stability of supply, shall endeavour to co-operate in the field of forestry. Areas of co-operation may include: (a) promotion of trade in timber products; (b) investment in the forestry sector; (c) development, utilisation and sustainable management of forest resources; (d) the impact of climate change on forestry resources; (e) forest fire management and control; (f) forest thinning; (g) forestry pest control; (h) farm forestry; (i) combating illegal logging and the associated trade; and (j) any other areas of co-operation as may be identified and agreed by the Parties. /// In pursuit of the objectives in Article 14.1, the Parties will encourage and facilitate, as appropriate, relevant activities, which may include, but are not limited to: (a) policy dialogue on agricultural, forestry and fisheries policy issues and exchanges of information on ways to promote and expand trade and investment in agriculture, forestry and fisheries sectors, including in the areas of: (i) research, science, technology and education to support government objectives for the agriculture, forestry and fisheries sectors; (ii) sustainable production systems, including for example climate change impacts, mitigation and adaptation, and the role of the agriculture, forestry and fisheries sectors in contributing to low-carbon green growth; or (iii) economic and trade issues as they relate to the agriculture, forestry and fisheries sectors;	Article 14.5; Article 14.3 (a)	December 20, 2015

Peru - China	1. The aims of cooperation on forestry matters and environmental protection will be, but not limited to, as follows: (a) establishing bilateral cooperation relations in the forestry sector; (b) developing a training program and studies for sustainable management of forests; (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; (d) cooperating on the execution of national projects, aimed at: improving the management of forest plantations for its transformation for industrial purposes and environmental protection; (e) elaborating studies on sustainable use of timber; (f) developing new technologies for the transformation and processing of timber and non-timber species; and (g) improving cooperation in agro-forestry technologies. 2. To achieve the objectives of the Article 149 (Objectives), the Parties may focus, as a means of cooperation and negotiations on concluding a bilateral agreement on forestry cooperation between the two Parties. Such collaboration will be as follows:(a) exchanges on science and technology as well as policies and laws relating the sustainable use of forest resources; (b) cooperation in training programs, internships, exchange of experts and projects advisory; (c) advice and technical assistance to public institutions and organizations of the Parties on sustainable use of forest resources and environmental protection; (d) facilitating forest policy dialogue and technical cooperation under the Network of Sustainable Forest Management and Forest Rehabilitation in Asia- Pacific Region, initiated at the 15th Asia Pacific Economic Cooperation (APEC) Meeting; (e) encouraging joint studies, working visits, exchange of experiences, among others; and (f) others activities mutually agreed.	Article 162	March 1, 2010

Peru - Korea, Republic of	1. The Parties will promote and strengthen cooperation in the field of forestry. 2. The Parties will encourage and facilitate, as appropriate, including, but not limited to the following activities: (a) implementation of sustainable forest management, including the development of related indicators; (b) management, development, and utilization of forest resources; (c) forest protection, including the prevention and control of forest fires, diseases, and insect pests; (d) promotion of joint measures to limit or reduce the adverse effects of the climate change; (e) investment in forest plantation and wood processing industries; (f) processing of, supply of, and trade in forest products; (g) development of eco-forestry technology and conservation of forest ecosystems; (h) research and development, education, and training; and (i) any other areas as may be agreed by the Parties.	Article 20.7	August 1, 2011

United Kingdom - Australia	3. The Parties recognise the important role that cooperation can play in addressing climate change. Consistent with Article 22.20 (Cooperation Frameworks), the Parties shall cooperate to address matters of mutual interest which may include:(g) addressing deforestation and forest degradation;/// 1. The Parties recognise the importance of conservation and sustainable forest management, including in relation to addressing climate change and reducing biodiversity loss, and the role of trade in pursuing this objective. The Parties acknowledge their role as major consumers, producers, and traders of forest products and the importance of the forest sector to the development and livelihood of communities and indigenous peoples. 2. The Parties recognise the importance of: (a) the sustainable management of forests for providing environmental, economic, and social benefits for present and future generations; (b) halting deforestation and forest degradation, including with respect to trade in commodities related to those activities; (c) trade in forest products harvested from sustainably managed forests and in accordance with the law of the country of harvest; and (d) taking measures that contribute to combatting illegal logging and related trade and to promoting trade in legally harvested forest products. 3. Accordingly, each Party shall take measures to combat illegal logging and related trade. 4. The Parties recognise that some forest products, when sourced from sustainably managed forests and used appropriately, can store carbon and avoid greenhouse gas emissions in other sectors and thus contribute toward achieving global environmental objectives. 5. Each Party shall: (a) cooperate and exchange information, as appropriate, on the implementation of measures that contribute to combatting illegal logging and related trade, including with respect to third	Article 22.5/// Article 22.13	May 31, 2023

	countries; and (b) cooperate bilaterally and in multilateral fora, as appropriate, on opportunities to halt deforestation and forest degradation, and the trade in commodities related to those activities, to reduce biodiversity loss, and to address other sustainable forest management and trade matters.		

United Kingdom - Cameroon	1. The Parties shall work together to facilitate trade between the UK and Cameroon in timber and forest products which come from objectively verifiable legal sources and help to achieve sustainable development. The Parties agree to: (a) implement measures to increase market confidence regarding the origin of forest products, particularly their legal and/or sustainable origin. These measures may include systems to improve the traceability of timber and forest products sold both within the Central African region and between the Cameroon and the UK; (b) put in place an audit and surveillance system that is independent of the control chain. 2. The Parties shall explore possible ways of improving commercial opportunities for timber and forest products with a legal or sustainable origin in the Central African region on the market of the UK. These measures may include, inter alia, stronger public procurement policies, measures to raise consumer awareness, measures to promote the processing of forest products in the Central African region, and activities and initiatives in association with private-sector operators. 3. The Parties undertake to develop non-discriminatory policies and/or legislation within the scope of this Chapter; they also undertake to ensure the effective and non-discriminatory implementation of these policies and/or legislation, in accordance with WTO provisions.	Article 50	January 1, 2021
United Kingdom - Canada	1.The Parties recognise the importance of the conservation and sustainable management of forests for providing environmental functions and economic and social opportunities for present and future generations, and of market access for forest products harvested in accordance with the law of the country of harvest and from sustainably managed forests.2.To this end, and in a manner consistent with their international obligations, the Parties undertake to: (a) encourage trade in forest products from sustainably managed forests and harvested in accordance with the law of the country of harvest; (b) exchange information, and if appropriate, cooperate on	Article 24.10 /// Article 25.3	January 1, 2021

	initiatives to promote sustainable forest management, including initiatives designed to combat illegal logging and related trade; (c) promote the effective use of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, done at Washington on 3 March 1973, with regard to timber species considered at risk; and (d) cooperate, where appropriate, in international fora that deal with the conservation and sustainable management of forests. 3.The Parties shall discuss the subjects referred to in paragraph 2, in the Committee on Trade and Sustainable Development or in the Bilateral Dialogue on Forest Products referred to in Chapter Twenty-Five (Bilateral Dialogues and Cooperation), in accordance with their respective spheres of competence. /// 1.The Parties agree that bilateral dialogue, cooperation and exchange of information and views on relevant laws, regulations, policies and issues of importance to the production, trade, and consumption of forest products are of mutual interest. The Parties agree to carry out this dialogue, cooperation and exchange in the Bilateral Dialogue on Forest Products, including: (a) the development, adoption and implementation of relevant laws, regulations, policies and standards, and testing, certification and accreditation requirements and their potential impact on trade in forest products between the Parties; (b) initiatives of the Parties related to the sustainable management of forests and forest governance; (c) mechanisms to assure the legal or sustainable origin of forest products; (d) access for forest products to the Parties or other markets; (e) perspectives on multilateral and plurilateral organisations and processes in which they participate, which seek to promote sustainable forest management or combat illegal logging; (f) issues referred to in Article 24.10 (Trade in forest products); and (g) any other issue related to forest products as agreed upon by the Parties. 2.The Bilateral Dialogue on Forest Products shall meet within the first year of the entry into force of this Agreement, and		

	thereafter in accordance with Article 25.1.2. 3.The Parties agree that discussions taking place in the Bilateral Dialogue on Forest Products can inform discussions in the Committee on Trade and Sustainable Development.		
United Kingdom - Eastern and Southern Africa States	Subject to the provisions of Article 35, the Parties agree to cooperate, including by facilitating support, in the following areas: (c) sustainable utilisation of biodiversity, forestry and wildlife resources; (n) integration of local communities in the management of biodiversity, forestry and wildlife resources; (p) sustainable management of forests and similar mechanisms.	Article 50.2 c, n and p	January 1, 2021

United Kingdom - Georgia	1. The Parties recognise the importance of ensuring the conservation and the sustainable management of forests and of forests' contribution to the Parties' economic, environmental and social objectives. 2. To that end, the Parties commit to: (a) promoting trade in forest products derived from sustainably managed forests, harvested in accordance with the domestic legislation of the country of harvest, which could include bilateral or regional agreements to that end;(b) exchanging information on measures to promote the consumption of timber and timber products from sustainably managed forests and, where relevant, cooperate to developing such measures; (c) adopting measures to promote the conservation of forest cover and combat illegal logging and related trade, including with respect to third countries, as appropriate; (d) exchanging information on actions for improving forest governance and where relevant cooperating to maximise the impact and ensure the mutual supportiveness of their respective policies aiming at excluding illegally harvested timber and timber products from trade flows; (e) promoting the listing of timber species under CITES where the conservation status of those species is considered at risk; and (f) cooperating at the regional and the global levels with the aim of promoting the conservation of forest cover and the sustainable management of all types of forests./// The Parties recognise the importance of working together on trade-related aspects of environmental and labour policies in order to achieve the objectives of Title IV (Trade and Trade-related Matters) of this Agreement. They may cooperate in, inter alia, the following areas:(l) trade-related measures to promote the conservation and sustainable management of forests, thereby reducing pressure on deforestation including with regard to illegal logging; and/// 1. Cooperation shall aim at preserving, protecting, improving and rehabilitating the quality of the environment, protecting human health, sustainable utilisation of	Article 225/// Article 231///Article 283	January 1, 2021

	natural resources and promoting measures at international level to deal with regional or global environmental problems, including in the areas of:(e) nature protection, including forestry and conservation of biological diversity;		

United Kingdom - Iceland, Liechtenstein and Norway	(1) The Parties recognise the importance of ensuring the conservation and sustainable management of forests and related ecosystems and the sustainable production of forest products and forest risk commodities in providing environmental, economic and social benefits for present and future generations, including by tackling climate change and reducing biodiversity loss resulting from deforestation and forest degradation, including from land use and land-use change for agricultural and mining activities. (2) The Parties acknowledge their role as major consumers, producers and traders of forest products and forest risk commodities. The Parties recognise the importance of sustainable supply chains in addressing greenhouse gas emissions, climate change and biodiversity loss and reducing the risk of the emergence of new diseases. The Parties further recognise the critical role of forests in providing numerous ecosystem services, including carbon storage, maintaining water quantity and quality, stabilising soils, and providing habitats for wild fauna and flora. Accordingly, and pursuant to paragraph 1, each Party shall: (a) support effective forest law enforcement and governance, including by maintaining or strengthening government capacity and institutional frameworks in order to promote sustainable forest management and sustainable production of forest products and forest risk commodities; (b) take measures to support the transition to sustainable production of forest products and forest risk commodities;promote trade in forest products that have been legally harvested, and trade in forest risk commodities that have been produced on legally owned and used land, including promoting such trade with respect to third countries as appropriate; (d) implement measures to prevent and combat illegal logging, illegal deforestation and forest degradation, and associated trade, throughout the entire value chain; (e) promote the development and use of timber legality	Article 13.27	December 1, 2021

	assurance instruments, also in third countries as appropriate, to ensure that only legally sourced timber and products thereof is traded between the Parties; (f) promote or support initiatives to reduce demand for products resulting from illegal logging, illegal deforestation and forest degradation, and associated trade, as well as information sharing and cross-border cooperation; (g) promote the effective use of CITES with particular regard to timber species; and (h) cooperate on issues pertaining to conservation and sustainable management of forests, mangroves and peatlands where relevant through existing bilateral arrangements if applicable and in the relevant multilateral fora in which they participate, in particular through the UN collaborative initiative on Reducing Emissions from Deforestation and Forest Degradation (REDD+) as encouraged by the Paris Agreement. (3) The Parties shall cooperate and exchange information on issues of mutual interest, such as on ways to promote sustainable forest management and land use practices in support of the UN Sustainable Development Goals, including through: (a) initiatives designed to combat illegal logging, illegal deforestation and forest degradation, and associated trade, including third country assurance schemes; (b) the encouragement of sustainable supply chains for forest products and forest risk commodities; (c) methodologies for the assessment and monitoring of supply chains for forest products and forest risk commodities; and (d) policy coherence on sustainable supply chains. This includes the development, introduction and implementation of consistent laws and regulations, including due diligence requirements for forest products and forest risk commodities and through exchange of information and engagement in international fora, as appropriate.		

United Kingdom - Japan	1. The Parties recognise the importance and the role of trade and investment in ensuring the conservation and sustainable management of forests. 2. In that context, the Parties shall: (a) encourage conservation and sustainable management of forests, and trade in timber and timber products harvested in accordance with the laws and regulations of the country of harvest; (b) contribute to combating illegal logging and related trade including, as appropriate, the trade with third countries; and (c) exchange information and share experiences at bilateral and multilateral levels with a view to promoting the conservation and sustainable management of forests and trade in legally harvested timber and timber products, as well as to combating illegal logging. /// Recognising the importance of cooperation on trade-related and investment-related aspects of environmental and labour policies in order to achieve the objectives of this Agreement, the Parties may, inter alia: (j) cooperate to promote the conservation and sustainable management of forests and trade in legally harvested timber and timber products, as well as to combat illegal logging	Article 16.7; Article 16.12	January 1, 2021

United Kingdom - Moldova, Republic of	1. The Parties recognise the importance of ensuring the conservation and the sustainable management of forests and of forests' contribution to the Parties' economic, environmental and social objectives. 2. To that end, the Parties commit to: (a) promoting trade in forest products derived from sustainably managed forests, harvested in accordance with the domestic legislation of the country of harvest. Actions, in this regard, may include the conclusion of a Forest Law Enforcement Governance and Trade Voluntary Partnership Agreement; (b) exchanging information on measures to promote the consumption of timber and timber products from sustainably managed forests and, where relevant, cooperate in the development of such measures; (c) adopting measures to promote the conservation of forest cover and to combat illegal logging and related trade, including with respect to third countries, as appropriate; (d) exchanging information on actions for improving forest governance and, where relevant, cooperating to maximise the impact and ensure the mutual supportiveness of their respective policies aiming at excluding illegally harvested timber and timber products from trade flows; (e) promoting the listing of timber species under CITES where the conservation status of that species is considered at risk; and (f) cooperating at the regional and global level with the aim of promoting the conservation of forest cover and the sustainable management of all types of forests, with use of certification promoting responsible management of the forests./// The Parties recognise the importance of working together on trade-related aspects of environmental and labour policies in order to achieve the objectives of Title V (Trade and Trade-related Matters) of this Agreement. They may cooperate in, inter alia, the following areas:(l) trade-related measures to tackle deforestation, including by addressing problems regarding illegal logging; and	Article 336///Article 342	January 1, 2021

United Kingdom - New Zealand	1.The Parties recognise the importance of:(a)kaitiakitanga in the conservation of the mauri, and the conservation and sustainable management, of forests and the sustainable production of forest products in providing environmental and ecosystem services; economic and social benefits and opportunities for present and future generations including by addressing climate change and reducing biodiversity loss; and the role of trade in pursuing this objective; and(b)combatting illegal logging, illegal deforestation and forest degradation, and associated trade, including with respect to non-parties.2.The Parties acknowledge their role as consumers, producers, and traders of forest products, and the importance of sustainable supply chains for forest products and commodities that can generally be associated with deforestation in addressing greenhouse gas emissions and biodiversity loss and achieving sustainable forest management.3.Accordingly, each Party shall:(a)promote the conservation and sustainable management of forests;(b)contribute to combatting illegal logging, illegal deforestation, and associated trade, including with respect to non-parties;(c)promote trade in forest products harvested in accordance with the law of the country of harvest and from sustainably managed forests;(d)promote trade in legally and sustainably produced commodities which could otherwise be associated with deforestation; and(e)endeavour to reduce deforestation and forest degradation, including from land use and land use change.4.In accordance with Article 22.19 (Cooperation) the Parties shall cooperate on ways to promote sustainable forest management and land use practices in support of the Sustainable Development Goals of the 2030 Agenda. Such cooperation may include:(a) initiatives designed to combat illegal logging, illegal deforestation and forest degradation, and associated trade, including assurance schemes; (b) the encouragement of sustainable supply chains for forest products and commodities that can generally be associated with deforestation;	Article 22.11	May 31, 2023

	(c) methodologies for the assessment and monitoring of supply chains for forest products and commodities that can generally be associated with deforestation; and (d) policies on sustainable supply chains.		

United Kingdom - SACU and Mozambique	Cooperation on environmental protection and sustainable utilisation and management of natural resources shall aim at: (i) tropical forests, water resources, coastal, marine and fisheries resources, wildlife, soils, biodiversity; and (v) desertification, drought and deforestation;/// The Parties acknowledge that climate change is a serious global environmental challenge and a threat to the achievement of the Sustainable Development Goals requiring adequate, predictable and timely financial support. For these reasons, and in accordance with the provisions of Article 4 of this Annex, cooperation shall: (a) recognise the vulnerability of the SACU Member States and Mozambique to climate-related phenomena such as coastal erosion, cyclones, flooding and environmentally induced displacements, and in particular of least developed and landlocked States to increasing floods, drought, deforestation and desertification; (d)focus on the following activities: (v) providing financial and technical support for mitigation action of the SACU Member States and Mozambique 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;/// In respect of paragraphs 1 and 2, the Parties may cooperate, inter alia, in the following areas: (e) the trade aspects of sustainable forest management;	Annex 7; Article 4/// Annex 7; Article 5/// Chapter 3; Article 11	January 1, 2021
United Kingdom - Ukraine	In order to promote the sustainable management of forest resources, the Parties commit to work together to improve forest law enforcement and governance and promote trade in legal and sustainable forest products.	Article 280	January 1, 2021
United States - Peru	Entire 8-page Annex on Forest Sector Governance	Annex 18.3.4	February 1, 2009

United States-Mexico-Canada Agreement (USMCA/CUSMA/T-MEC)	1. The Parties acknowledge their role as major consumers, producers, and traders of forest products and the importance of a healthy forest sector to provide livelihoods and job opportunities, including for indigenous peoples. 2. The Parties acknowledge the importance of: (a) the conservation and sustainable management of forests for providing environmental economic, and social benefits for present and future generations; (b) the critical role of forests in providing numerous ecosystem services, including carbon storage, maintaining water quantity and quality, stabilizing soils, and providing habitat for wild fauna and flora; and (c) combatting illegal logging and associated trade. 3. The Parties recognize that forest products, when sourced from sustainably managed forests, contribute to fulfilling global environmental objectives, including sustainable development, conservation and sustainable use of resources, and green growth. 4. Accordingly, each Party commits to: (a) maintain or strengthen government capacity and institutional frameworks to promote sustainable forest management; and (b) promote trade in legally harvested forest products. 5. The Parties shall exchange information and cooperate, as appropriate, on initiatives to promote sustainable forest management, including initiatives designed to combat illegal logging and associated trade.	Article 24.23	July 1, 2020