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# THE PRECAUTIONARY PRINCIPLE IN BILATERAL INVESTMENT TREATIES: BALANCING ENVIRONMENTAL PROTECTION AND FOREIGN DIRECT INVESTMENT

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## I. ABSTRACT

*This paper examines the integration of the precautionary principle (PP) into Bilateral Investment Treaties (BITs) as a legal mechanism for reconciling environmental protection with foreign direct investment (FDI). It traces the evolution of the PP from international environmental law, particularly the Rio Declaration, into international economic and investment law, with attention to its treatment in the European Union and the World Trade Organization. The paper first explains the conceptual and normative foundations of precaution, including its relevance where scientific uncertainty surrounds risks of serious or irreversible environmental harm. It then considers the WTO experience, including EC–Hormones, to show how precautionary reasoning remains constrained by requirements of scientific evidence, risk assessment, and proportionality. Thereafter, the paper assesses the gradual and still cautious incorporation of environmental and sustainable development provisions into modern BITs and related treaty models, including examples such as CETA, the EU–Vietnam Investment Protection Agreement, the BLEU Model BIT, and the Morocco–Nigeria BIT. It further analyses the tensions that may arise between precautionary environmental measures and traditional investment protection standards, particularly fair and equitable treatment and indirect expropriation, with reference to arbitral practice such as Chemtura v Canada. Through doctrinal and comparative analysis of treaty practice, arbitral decisions, and academic literature, the paper argues that these tensions are not irreconcilable. It proposes clearer treaty drafting, express recognition of States' regulatory autonomy, and the promotion of sustainable and green investment policies. Ultimately, the paper concludes that*

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*the precautionary principle can assist in aligning international investment governance with sustainable development while preserving investor confidence and environmental protection.*

## II. KEYWORDS

Precautionary Principle, Bilateral Investment Treaties, Foreign Direct Investment, Sustainable Development, Regulatory Autonomy.

## III. INTRODUCTION

Climate change and environmental deterioration have become significant global challenges, leading to reconsideration of how economic growth can be reconciled with the protection of the Environment. Foreign Direct Investment (FDI) is an important tool for economic growth specially for developing countries. FDI is defined as "cross-border investment" where an investor from one country exerts "control or significant degree of influence on the management of an enterprise that is resident in another economy".[2] The effects of globalisation created a significant increase of the flow of FDI, prompting many countries to ratify Bilateral Investments treaties (BIT).

However, this aim of attracting FDI came with environmental costs. Developing countries enacted legislation and policies detrimental to the environment creating favourable conditions for polluting businesses.[3] In fact, foreign investors from developed countries relocate their polluting business to developing countries with more lenient environmental regulations.[4] This phenomenon is called the pollution haven hypothesis (PHH) and explains the reason developed countries have less carbon emissions compared to emerging economies.[5]

To address environmental issues, many countries try to attract cleaner forms of direct investment, also referred to as "Green FDI". In this context, the principle of precaution

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[2] International Monetary Fund (IMF) and Organisation for Economic Co-operation and Development (OECD). (2001). Glossary of Direct Investment Terms and Definitions. Survey of the Implementation of Methodological Standards for Direct Investment (SIMSDI)

[3] Kutlu Furtuna O, Atis S (2024) Does foreign direct investment affect environmental degradation: Evidence from largest carbon intense countries. PLoS ONE 19(11): e0314232. https://doi.org/10.1371/journal.pone.0314232

[4] Binyam Afewerk Demena, Sylvanus Kwaku Afesorgbor, The effect of FDI on environmental emissions: Evidence from a meta-analysis, Energy Policy, Volume 138, 2020

[5] Ibid.

(PP) made its way into international investment law and was timidly introduced in BITs. The principle of precaution allows governments to adopt precautionary measures when there is uncertainty in scientific evidence regarding a potential Environmental or human health hazard, especially when the consequences are significant[6]. The 1992 Rio Declaration made the principle of precaution a guiding principle of international environment Law

The growing interaction between international investment Law and environmental governance has generated academic and political debate. Traditionally, BITs were mainly set up to protect foreign investors from political and regulatory risks in host States through principles such as fair and equitable treatment, protection from expropriation and investor-state dispute settlement mechanisms.[7] However, the expansion of environmental regulations both at domestic and international levels has started to challenge this traditional method of foreign investors protection. Academics suggest that strong investment protection may limit the ability of States to adopt environmental and public health measures, especially when such regulations impact the profitability of foreign investments.[8] This concern led to the rise of the concept called "regulatory chill" which suggests that governments hesitate to adopt stricter environmental regulations and policies due to potential expensive arbitration claims from foreign investors.[9] Such tensions are particularly important in developing countries, where governments aim to attract foreign direct investment while also addressing environmental dégradation and climate related risks. In this context, the precautionary principle has become increasingly relevant as a tool capable of reconciling environmental protection with investment protection obligations. Modern investment treaties are progressively incorporating provisions about sustainable

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[6] Bourguignon, D. (2015). The precautionary principle: Definitions, applications and governance. EPRS | European Parliamentary Research Service, Members' Research Service.
[7] Rudolf Dolzer and Christoph Schreuer, Principles of International Investment Law (2nd edn, Oxford University Press 2012).
[8] Kate Tienhaara, The Expropriation of Environmental Governance: Protecting Foreign Investors at the Expense of Public Policy? (Cambridge University Press 2011).
[9] Gus Van Harten and Dayna Nadine Scott, 'Investment Treaties and the Internal Vetting of Regulatory Proposals: A Case Study from Canada' (2016) 7 Journal of International Dispute Settlement 92.

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development, environmental protection, the right of States to regulate in the public interest.[10] However, the integration of the precautionary principle into BITs stays inconsistent, leading to legal uncertainty regarding the balance between environmental protection and investor rights.

The growing importance of sustainable development in international law, further strengthens the relevance of this debate. Climate change, the decline in biodiversity and the rising environmental deterioration have intensified pressure on States to adopt and implement environmental policies and to transition towards sustainable economic models. At the same time, international investment remains essential for economic development, especially in developing countries that lean on foreign capital and technology transfer. Consequently, mordern investment governance is increasingly trying to reconcile economic development with environmental sustainability. The integration of environmental principles, including the precautionary principle, into bilateral investment treaties does reflect that wider change in international economic law, towards more sustainable and balanced regulatory frameworks.[11]

In this paper, we take a look at how the precautionary principle can be integrated into BITs to balance environmental protection and investor rights.

Initially, this principle emerged from international environmental law before making its way into international economic law. Then, some Bilateral Investment Treaties (BITs) incorporated this principle, but it faced some limits. However, these limits are not insurmountable, and the PP can exist alongside a framework that is favourable to FDI.

### A. Research Objectives

The objectives of this paper are:

[10] *United Nations Conference on Trade and Development (UNCTAD), Investment Policy Framework for Sustainable Development (2015).*

[11] *United Nations Conference on Trade and Development (UNCTAD), World Investment Report 2023: Investing in Sustainable Energy for All (United Nations 2023).*

1. To trace the doctrinal evolution of the precautionary principle from international environmental law into international economic and investment law.
2. To identify the principal legal tensions between precautionary environmental measures and traditional investment protection standards, particularly fair and equitable treatment and indirect expropriation.
3. To evaluate possible reconciliation mechanisms, including clearer treaty drafting, recognition of States' regulatory autonomy, and the promotion of sustainable and green investment policies.

### B. Research Questions

This paper addresses the following research questions:

1. How has the precautionary principle evolved from international environmental law into international investment law?
2. What legal tensions arise between precautionary environmental measures and investment protection standards such as fair and equitable treatment and indirect expropriation?
3. Can the precautionary principle be reconciled with investor protection obligations in BITs without undermining foreign direct investment or States' regulatory autonomy?

### C. Research Methodology

This paper uses a qualitative research method to analyse international legal frameworks, treaty texts, case law, and academic literature to assess the integration of the precautionary principle into BITs.

Particular attention is given to academic debates concerning the relationship between international investment law and environmental governance. Existing literature on the precautionary principle, sustainable development, and investor protection is reviewed to identify the main legal tensions surrounding the incorporation of environmental precaution into Bilateral Investment Treaties. The paper also relies on comparative analysis of selected investment treaties and arbitration decisions to evaluate the evolving integration of environmental protection provisions into international investment agreements. Through this doctrinal approach, the research assesses whether the precautionary principle can coexist with investment protection obligations while preserving both regulatory autonomy and investor confidence.[12]

## IV. ORIGIN AND EVOLUTION OF THE PP

The precautionary principle gradually emerged as one of the central principles of international environmental governance before expanding into other areas of international law, including international trade and investment law. Although initially developed within environmental protection frameworks, the principle progressively influenced broader regulatory approaches relating to public health, food safety, and sustainable development. Understanding the origin and evolution of the precautionary principle is therefore essential to assessing its subsequent incorporation into Bilateral Investment Treaties and international investment governance.[13]

### A. The PP in International Environmental Law

The precautionary principle (PP), originated During the 1970s in German law before establishing itself as a key concept in international environmental law[14]. Since then, it has been endorsed by many international environment conventions, but it was first enshrined in the 1992 Declaration of Rio. The principle 15 of the Declaration states that "in order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for

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[12] Rudolf Dolzer and Christoph Schreuer, Principles of International Investment Law (2nd edn, Oxford University Press 2012); Philippe Sands, Jacqueline Peel, Adriana Fabra and Ruth MacKenzie, Principles of International Environmental Law (4th edn, Cambridge University Press 2018); Kate Tienhaara, The Expropriation of Environmental Governance: Protecting Foreign Investors at the Expense of Public Policy? (Cambridge University Press 2011); Gus Van Harten, Investment Treaty Arbitration and Public Law (Oxford University Press 2007).

[13] Philippe Sands, Jacqueline Peel, Adriana Fabra and Ruth MacKenzie, Principles of International Environmental Law (4th edn, Cambridge University Press 2018)

[14] Bourguignon, D. (2015). The precautionary principle: Definitions, applications and governance. EPRS | European Parliamentary Research Service, Members' Research Service.

postponing cost-effective measures to prevent environmental degradation".[15] Subsequently, the PP has been included in nearly all international treaties on environmental protection such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity.

The precautionary principle developed in response to wider understanding that traditional approaches to environmental regulation were often insufficient to prevent irreversible environmental damage. Earlier regulatory frameworks demanded for conclusive scientific evidence before any preventive measures could be adopted. However, environmental disasters and scientific uncertainty showed the limitations of this reactive approach. As a result, the precautionary principle presented a preventive logic into environmental governance by permitting States to take protective action even where scientific certainty concerning environmental risks remains incomplete.[16]

The principle gradually evolved from policy considerations into a broader legal principle, recognised in many international environmental instruments. After the Rio Declaration, the precautionary principle appears in various multilateral environmental agreements, including the COnvention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC).[17] Its incorporation into these treaties reflects the growing international consensus that environmental protection needs anticipatory, and preventive regulatory measures not only purely reactive responses.

Nevertheless, the legal status of the precautionary principle continues to be debated in international law. Some scholars argue that the principle has developed into a customary principle within international environmental law due to its widespread

[15] United Nations. (1992). Rio Declaration on Environment and Development. Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992.
[16] Nicolas de Sadeleer, Environmental Principles: From Political Slogans to Legal Rules (Oxford University Press 2002).
[17] Convention on Biological Diversity (1992); United Nations Framework Convention on Climate Change (1992).

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recognition and repeated inclusion in international agreements.[18]Others maintain that the principle is still more like a policy approach rather than a binding legal obligation, mainly due to the absence of universally accepted definition, and inconsistent state practice.[19] Despite these debates, the precautionary principle has become an influential normative framework that forms environmental governance at both national and international levels.

The growing influence of the precautionary principle in international environmental law progressively broadened beyond environmental treaties and started shaping regulatory approaches in other areas of international governance, particularly in the European Union and the World Trade Organisation frameworks (WTO). The application of the principle in these contexts shows both its increasing normative significance and the legal controversies surrounding its interpretation and implementation.[20]

### B. The PP in EU and WTO

The PP has now become a fundamental component of the European Union (EU) policy regarding the Environment and food safety. The principle is codified in Article 191 of the treaty on the functioning of the but it is not defined[21]. Indeed, there is no widely recognised definition of the PP, even the European Commission states the scope of the principle "depends on trends in case law", yet it does not create legal uncertainty.[22]

In the context of the World Trade Organisation (WTO), the PP is reflected in Article 5.7 of the Sanitary and Phytosanitary Measures (SPS) Agreement, which allows temporary measures when scientific evidence is lacking, as long as these measures are

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18 James Cameron and Juli Abouchar, 'The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment' (1991) 14 Boston College International and Comparative Law Review 1.
19 Cass R Sunstein, Laws of Fear: Beyond the Precautionary Principle (Cambridge University Press 2005).
20 Jacqueline Peel, Science and Risk Regulation in International Law (Cambridge University Press 2010)
21 Bourguignon, D. (2015). The precautionary principle: Definitions, applications and governance. EPRS | European Parliamentary Research Service, Members' Research Service.
22 Ibid.

evaluated and justified over time.[23] However, WTO disputes such as EC-Hormones (1998) and EC-Biotech (2006) underline the limits of this principle in trade regulations. In these cases, the WTO stressed the importance of conducting risk assessments and providing solid scientific proof, restricting the wider application of precautionary measures.[24] These cases highlight the persistent conflict between free trade and investment and the independence of regulatory bodies when tackling environmental health concerns.

The EU has become one the strongest advocates of the precautionary principle in international governance. Within the EU legal order, the principle functions not just as an environmental policy instrument but also as a broader regulatory approach applicable to public health, food safety, and consumer protection.[25] The European Commission considers the precautionary principle essential in situations where scientific evidence is uncertain, but where the potential risks to human health or the environment could be serious or irreversible.

Consequently, EU institutions have more or less relied on the principle to justify restrictives measures concerning genetically modified organisms (GMOs), chemicals, pesticides, and food safety standards. However, the wide application of the precautionary principle by the EU has created tensions within the international trade system, especially in the context of the WTO. In general, the WTO framework prioritises scientific justification and non-discrimination in trade regulation. Therefore, precautionary measures adopted without sufficient scientific evidence may be contested as unjustified trade barriers.[26] This tension became obvious in disputes concerning the European Communities, where WTO dispute panels and the Appellated Body examined whether precautionary measures complied with the requirements of the SPS Agreement.

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[23] Shaw, S. and Schwartz, R., 2005. Trading Precaution: The Precautionary Principle and the WTO. United Nations University Institute of Advanced Studies

[24] Ibid.

[25] European Commission, Communication from the Commission on the Precautionary Principle COM (2000) 1 final.

[26] Nicolas de Sadeleer, Environmental Principles: From Political Slogans to Legal Rules (Oxford University Press 2002).

In EC-Hormones, the WTO Appellate Body affirmed that Members may adopt sanitary measures when there is scientific uncertainty but emphasised that such measures are still supported by risk assessment procedures.[27] Also, in EC-Biotech, the WTO Panel examined the European Communities'regulatory approach towards genetically modified products and underscored concerns about the delays and insufficient scientific justification.[28] These disputes illustrate that the precautionary principle that while the precautionary principles influences international trade governance, its application in the WTO continues to be limited by the requirements for scientific evidence and proportionality.

The relationship between the precautionary principle and international economic law therefore remains complex. While the EU promotes a relatively broad interpretation of precaution, the WTO takes a more careful stance, in order to keep trade liberalisation and to prevent disguised protectionism.[29] This divergence illustrates the broader challenge of balancing environmental protection with economic integration within international legal frameworks.

The debates surrounding the precautionary principle in the EU and WTO contexts later influenced discussions regarding its incorporation into international investment agreements and Bilateral Investment Treaties. This situation has led environmentally conscious countries to include clauses with the precautionary principle in the BITs they ratify, allowing preventive measures against risks even in the absence of full scientific certainty. This development reflected attempts to reconcile investment protection with regulatory autonomy and sustainable development objectives. Nevertheless, the incorporation of the precautionary principle into BITs remained

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[27] European Communities - Measures Concerning Meat and Meat Products (Hormones), WTO Appellate Body Report WT/DS26/AB/R (1998).

[28] [21] European Communities - Measures Affecting the Approval and Marketing of Biotech Products, WTO Panel Report WT/DS291/R (2006).

[29] Jacqueline Peel, Science and Risk Regulation in International Law (Cambridge University Press 2010).

cautious and limited, revealing continuing tensions between environmental governance and investor protection obligations.[30]

## V. INTEGRATION OF THE PP IN BITS AND ITS LIMITS

The growing importance of environmental governance and sustainable development has been influencing the evolution of international investment agreements. Although traditional BITs mostly focused on investors protection, modern investment treaties increasingly incorporate environmental considerations and recognised the regulatory autonomy of States. In this context, the precautionary principle progressively moved into international investment law through sustainable development provisions, environmental clauses, and references to the right to regulate. However, the incorporation of the principle into BITs remains cautious and keeps facing significant legal and practical limitations.[31]

### A. Timid Integration in BIT

Modern BITs are gradually and timidly incorporating the precautionary principle to address growing environmental issues. For instance, the Belgian - Luxembourg Economic Union (BLEU) model BIT mandates compliance with international environmental obligations, which includes the precautionary principle.[32] While the BLEU model BIT does not explicitly mention the PP, the wording of its provisions allows States to adopt precautionary measures in the public interest.[33]

Similarly, the Comprehensive Economic and Trade Agreement (CETA) between the EU and Canada reflects precautionary reasoning in its trade and environment framework. However, it should not be described as "not legally binding". Rather, CETA's sustainable development, labour, and environmental commitments form part of a binding international treaty, although they are subject to dedicated consultation, assessment, review, and panel-of-experts procedures rather than a sanctions-backed

[30] United Nations Conference on Trade and Development (UNCTAD), Investment Policy Framework for Sustainable Development (2015).
[31] Katia Yannaca-Small (ed), Arbitration Under International Investment Agreements: A Guide to the Key Issues (Oxford University Press 2010).
[32] Edit WTI (2019) Belgium-Luxembourg Economic Union (BLEU) Model BIT 2019
[33] Ibid.

state-to-state enforcement mechanism.[34] The BLEU model BIT 2019 was inspired by CETA and reflects the EU's aim to harmonise investment protection with State sovereignty and sustainability.[35]

Moreover, The EU-Vietnam Investment Protection Agreement (IPA), signed in 2019, promotes sustainable development and regulatory autonomy, subtly aligning with the PP.

Although it allows States to adopt precautionary measures for the protection of the environment and public health, these provisions are binding but the PP is not explicitly mentioned, reflecting a cautious integration of the principle into investment law.[36]

This trend reflects the EU's commitment to incorporating environmental considerations, including the precautionary principle, in investment treaties, even when these are not explicitly named. These agreements, ratified by the EU, include binding or semi-binding provisions on sustainable development, environmental protection, and the right to regulate and reference enforceable precautionary measures.

Following the EU approach other countries, especially developing ones, are adopting similar frameworks. For instance, the Morocco - Nigeria BIT (2016) goes a step further by embedding binding environmental clauses, explicitly incorporating the PP, and emphasising on sustainable development and regulatory sovereignty.[37] This marks a growing global shift toward greener investment treaties, extending the influence of such principles beyond the EU and international environmental law. However, there are limits in the integration and application of Environmental Protection measures,

[34] Comprehensive Economic and Trade Agreement (CETA), ch 24, arts 24.8 and 24.14–24.16; Joint Interpretative Instrument on CETA, section 10.
[35] Kremer, M., Paschalidis, P., Brossmann, D., & Vedev, P. (2024) 'The 2019 BLEU Model BIT: BLEU's Vision of the Future of Investment Protection', European Investment Law and Arbitration Review, 9(1), pp. 41–68. Available at: https://doi.org/10.54648/eila2024025
[36] Edit WTI (2019) EU-Vietnam Investment Protection Agreement (IPA).
[37] Mallya, M. and Turnbull, K. (2024) 'Bilateral Investment Treaties, Investor Obligations and Customary International Environmental Law', in P. Merkouris et al. (eds.) Custom and its Interpretation in International Investment Law. Cambridge: Cambridge University Press (The Rules of Interpretation of Customary International Law), pp. 261–283.

especially the PP. Indeed, clashes with protection of foreign investors can lead to violation of fair and equitable treatment (FET).

The gradual incorporation of environmental considerations into BITs reflects a broader transformation of international investment law. Traditional BITs primarily focused on maximising investor protection and reducing regulatory risks for foreign investors. Environmental concerns were generally absent from earlier investment treaties, which often granted broad substantive protections without expressly recognising the regulatory powers of host States.[38] However, with more difficult environmental challenges and growing criticism of investor-state dispute settlement mechanisms, States were progressively encouraged to reform investment treaty drafting.

Modern investment agreements are attempting to balance investment protection with sustainable development objectives. One of the most important developments is the emergence of "right to regulate" clauses. These provisions explicitly state the authority of States to adopt measures necessary to protect public interests such as environmental protection, public health, and sustainable development.[39] Although such clauses do not always directly refer to the precautionary principle, they create legal space for precautionary environmental regulation within international investment law frameworks. In practice, this can happen without an explicit mention, which gives legal space to use precautionary approaches for environmental purposes.

The European Union has played a particularly important role in pushing this evolution. In recent years, EU investment agreements integrate more and more sustainable development language and environmental protection provisions into their treaty frameworks. Agreements such as CETA and the EU-Vietnam Investment Protection Agreement demonstrate the EU's attempt to balance investment liberalisation with environmental governance and climate-related objectives.[40] This

[38] Rudolf Dolzer and Christoph Schreuer, Principles of International Investment Law (2nd edn, Oxford University Press 2012).
[39] United Nations Conference on Trade and Development (UNCTAD), World Investment Report 2022: International Tax Reforms and Sustainable Investment (United Nations 2022).
[40] European Commission, EU Approach to Sustainable Investment Policy (2021).

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approach reflects wider policy shifts within the EU toward integrating sustainability considerations into external economic relations.

Similarly, a number of developing countries have also adopted more environmentally conscious investment treaty models. The Morocco-Nigeria BIT is a notable example because it not only acknowledges sustainable development objectives but also applies obligations on investors regarding environmental protection and corporate social responsibility.[41] This illustrates an important departure from traditional investment treaties, which historically focused almost exclusively on investor rights rather than investor responsibilities.

Even with these developments, the integration of environmental principles into investment treaties is still relatively cautious and fragmented. In many agreements, environmental and sustainable development provisions are often drafted in a broad or non-binding way.[42] Furthermore, the precautionary principle is rarely incorporated explicitly, and States often avoid adopting treaty language that might generate excessive uncertainty for foreign investors. Therefore, while modern BITs show increasing openness toward environmental governance, the integration of precautionary approaches into international investment law continues to be limited and uneven. In fact, the principle creates concerns regarding legal certainty, regulatory discretion, and compatibility with traditional investment protection standards. As a result, the application of precautionary environmental measures within international investment law is subject to important legal and practical challenges.[43]

### B. Challenges and limits of the PP

The precautionary principle (PP) faces many challenges when incorporated into BITs. One major issue is the lack of a standard definition. Interpretations differ, especially

[41] Morocco–Nigeria Bilateral Investment Treaty (2016).
[42] Kyla Tienhaara, 'Regulatory Chill and the Threat of Arbitration: A View from Political Science' in Chester Brown and Kate Miles (eds), Evolution in Investment Treaty Law and Arbitration (Cambridge University Press 2011).
[43] Ibid.

regarding the amount of scientific uncertainty necessary to justify measures.[44] The flexible definition of the PP is considered as a strength but also a weakness; it protects against hazards while also potentially resulting in misuse or overreach.[45] For this reason, it is often criticised as a political or protectionist tool.[46] The WTO Committee on Trade and Environment (CTE) has pointed out that this lack of consensus definition hinders broader integration into global frameworks.[47]

The PP is also in conflict with other important principles of Investment protections such as fair equitable treatment (FET) and expropriation provisions. FET protects foreign investors legitimate expectations regarding regulatory stability, and precautionary measures can be considered as violations if they alter investment conditions.[48] Moreover, environmental regulations motivated by the PP may lead to indirect expropriation. Thus, to avoid discouraging investors, governments are hesitant to enact precautionary measures.[49]

In *Chemtura v Canada* (2010), Canada adopted a precautionary regulatory measure by restricting a pesticide on environmental and public health grounds. The investor argued that the measure violated Canada's obligations under NAFTA. However, the tribunal upheld Canada's regulatory action and recognised that non-discriminatory measures adopted for public welfare objectives may fall within the State's legitimate regulatory authority.[50] This case illustrates the continuing tension between regulatory autonomy and investment protection, while also supporting the view that carefully justified environmental measures can coexist with investment treaty obligations.

[44] Bourguignon, D. (2015). The precautionary principle: Definitions, applications and governance. EPRS | European Parliamentary Research Service, Members' Research Service
[45] Shaw, S. and Schwartz, R., 2005. Trading Precaution: The Precautionary Principle and the WTO. United Nations University Institute of Advanced Studies, Prieur, M., 2007. Le principe de précaution. [PDF] Available at: https://www.legiscompare.fr/web/IMG/pdf
[46] Ibid.
[47] Ibid.
[48] Su, K. and Shen, W., 2023. Environmental protection provisions in international investment agreements: Global trends and Chinese practices. Sustainability, 15(11), p.8525. Available at: https://doi.org/10.3390/su15118525
[49] Ibid.
[50] Chemtura Corporation v. Government of Canada, PCA Case No. 2008-01, Award dated 2 August 2010. Available at: https://www.italaw.com/cases/460

A more recent and directly relevant illustration appears in Eco Oro Minerals Corp v Colombia (2021). In that case, Colombia restricted mining activities in the Santurbán Páramo, an environmentally sensitive high-mountain ecosystem, in order to protect water resources and biodiversity. The tribunal accepted that Colombia's environmental measures pursued a legitimate public welfare objective and rejected the expropriation claim, treating the measures as a good-faith exercise of regulatory powers. However, the tribunal also found a breach of the minimum standard of treatment, including fair and equitable treatment, due to Colombia's delay, inconsistency, and lack of clarity in delimiting the protected area and managing the investor's concession rights.

*Eco Oro* therefore complicates the more optimistic view that the precautionary principle and investment protection standards are fully reconcilable in practice. The decision shows that even where an environmental measure is legitimate and precautionary in substance, a State may still incur liability if the regulatory process is arbitrary, disproportionate, or insufficiently predictable. Accordingly, the case demonstrates that reconcilability between the precautionary principle and investment protection remains only partially achieved. It reinforces the need for precise treaty drafting, transparent administrative processes, and clearer recognition of States' environmental regulatory autonomy within BITs.[51]

One of the principal challenges associated with the precautionary principle in international investment law concerns the tension between environmental regulation and the protection of investors' legitimate expectations. Investment treaties generally seek to guarantee a stable and predictable legal framework for foreign investors. Consequently, significant regulatory changes adopted after an investment has been made may give rise to claims alleging violations of the fair and equitable treatment (FET) standard.[52] Environmental measures based on precautionary considerations

[51] *Eco Oro Minerals Corp v Republic of Colombia*, ICSID Case No ARB/16/41, Decision on Jurisdiction, Liability and Directions on Quantum, 9 September 2021.
[52] Rudolf Dolzer and Christoph Schreuer, Principles of International Investment Law (2nd edn, Oxford University Press 2012).

may therefore create legal uncertainty where investors argue that regulatory actions were unforeseeable, arbitrary, or disproportionate.

This tension is particularly visible in disputes involving environmental and public health regulations. While arbitral tribunals increasingly recognise the sovereign right of States to regulate in the public interest, they also attempt to preserve legal predictability for foreign investors.[53] As a result, tribunals often seek to balance environmental objectives with investment protection obligations on a case-by-case basis, leading to inconsistent interpretations and outcomes.

In addition to fair and equitable treatment claims, precautionary environmental measures may also give rise to allegations of indirect expropriation. Unlike direct expropriation, indirect expropriation occurs where regulatory measures substantially affect the value or economic use of an investment without formally transferring ownership.[54] Environmental regulations restricting industrial activities, banning hazardous substances, or imposing stricter environmental standards may therefore be challenged by investors as indirect expropriation measures requiring compensation.

The case of *Methanex v. United States (2005)* illustrates the complex relationship between environmental regulation and investment protection. In this dispute, the claimant challenged California's prohibition of a gasoline additive due to concerns regarding groundwater contamination. However, the tribunal rejected the claim and affirmed that non-discriminatory environmental regulations adopted in good faith for public welfare purposes generally do not constitute expropriation under international investment law.[55] Similarly, in Philip Morris v Uruguay, the tribunal upheld Uruguay's tobacco control measures and reaffirmed the State's sovereign authority to adopt public health regulations.[56] These decisions demonstrate a growing recognition of regulatory autonomy within investment arbitration.

[53] Gus Van Harten, Investment Treaty Arbitration and Public Law (Oxford University Press 2007).
[54] UNCTAD, Expropriation: UNCTAD Series on Issues in International Investment Agreements II (United Nations 2012).
[55] Methanex Corporation v United States, Final Award (2005).
[56] Philip Morris Brands Sàrl v Uruguay, ICSID Case No ARB/10/7, Award (2016).

Nevertheless, concerns remain regarding the inconsistent interpretation of environmental measures by arbitral tribunals. Critics argue that investment arbitration mechanisms may still prioritise investor protection over environmental governance, particularly where treaty language lacks clear environmental exceptions or explicit references to precautionary regulation.[57] The absence of a universally accepted definition of the precautionary principle further complicates its application within investment disputes and contributes to continuing legal uncertainty.

Despite these legal and practical challenges, the tensions between environmental precaution and investment protection are not irreconcilable. Recent developments in international investment law demonstrate increasing efforts to accommodate environmental governance within investment treaty frameworks while maintaining investor confidence and legal predictability. Through clearer treaty drafting, balanced interpretation of investment protections, and the promotion of sustainable investment policies, the precautionary principle can progressively coexist with foreign investment protection obligations.[58]

## VI. SURMOUNTABLE CHALLENGES

Although the incorporation of the precautionary principle into Bilateral Investment Treaties presents important legal and practical difficulties, these challenges are not insurmountable. Recent developments in international investment governance demonstrate increasing efforts to reconcile environmental protection with investor rights through treaty reform, sustainable development provisions, and clearer regulatory frameworks. In this context, both precise treaties drafting and the promotion of environmentally sustainable investment policies may contribute to balancing regulatory autonomy with investment protection obligations.[59]

[57] Kate Tienhaara, The Expropriation of Environmental Governance: Protecting Foreign Investors at the Expense of Public Policy? (Cambridge University Press 2011).
[58] United Nations Conference on Trade and Development (UNCTAD), Investment Policy Framework for Sustainable Development (2015).
[59] United Nations Conference on Trade and Development (UNCTAD), World Investment Report 2023: Investing in Sustainable Energy for All (United Nations 2023).

### C. Clear treaty language

Integrating the PP into BITs will require a clear treaty language.[60] However, clearly defining the PP might result in significant regulatory power for governments, allowing them to implement protectionist measures disguised as precautionary actions.[61] A solution could be to align the definition of PP with international Environmental standards like the Rio Declaration (1992), and this way uncertainty will lessen and diminish the chances of misapplication. In fact, clarity is crucial for guaranteeing that the principle is implemented uniformly and efficiently in protecting environmental issues without imposing unnecessary investment barriers.

Clear treaty drafting plays an important role in reducing legal uncertainty within international investment law. One of the major criticisms concerning the precautionary principle is about the absence of a universally accepted definition and the broad discretion it may grant to States. Therefore, investment treaties incorporating environmental precaution provisions must clearly define the scope and application of precautionary measures to avoid arbitrary or discriminatory regulatory actions.[62] Precise treaty language could therefore contribute to balancing environmental protection with legal predictability for foreign investors, in a more measured way.

Recent investment treaty practice shows a growing attempt to clarify the relationship between environmental regulation and investment protection obligations. Modern agreements frequently incorporate provisions that reaffirm the "right to regulate" in areas relating to environmental protection, public health, and sustainable development.[63] Such clauses aim to lower the risk of investment disputes by explicitly

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[60] Arslan, K.B., 2023. Application of the Precautionary Principle in Investment Arbitration. Transnational Dispute Management (TDM), 1. Available at: https://www.transnational-dispute-management.com

[61] Shaw, S. and Schwartz, R., 2005. Trading Precaution: The Precautionary Principle and the WTO. United Nations University Institute of Advanced Studies, Prieur, M., 2007. Le principe de précaution. [PDF] Available at: https://www.legiscompare.fr/web/IMG/pdf

[62] Nicolas de Sadeleer, Environmental Principles: From Political Slogans to Legal Rules (Oxford University Press 2002).

[63] United Nations Conference on Trade and Development (UNCTAD), Investment Policy Framework for Sustainable Development (2015).

recognising that non-discriminatory environmental measures adopted in good faith do not automatically count treaty violations.

In addition, some treaties contain general exception clauses that are inspired by Article XX of the General Agreement on Tariffs and Trade (GATT). These clauses permit States to adopt measures necessary to protect human, animal, or plant life and health, as long as such measures are not applied in an arbitrary or protectionist manner.[64] The insertion of such provisions may strengthen the legal basis for precautionary environmental measures within investment treaty frameworks.

Greater treaty precision may also create more consistent arbitral interpretation. One major challenge in investment arbitration comes from the broad and sometimes vague wording of substantive investment protection standards such as fair and equitable treatment and indirect expropriation.[65] More detailed drafting concerning environmental protection and precautionary regulation may therefore reduce interpretative uncertainty and tensions between investor rights and environmental governance.

Furthermore, clearer treaty drafting may improve investor confidence rather than undermine it. Although some investors worry that precautionary measures may lead to more regulatory unpredictability, transparent and well-defined environmental obligations may instead strengthen legal certainty by clarifying the regulatory powers of host States from the start of the investment relationship.[66] In this context, legal clarity benefits both States and investors by creating more predictable and balanced investment governance frameworks.

While clearer treaty drafting can reduce legal uncertainty and strengthen the regulatory framework regarding precautionary environmental measures, treaty reform alone is too insufficient to fully reconcile environmental governance with

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[64] General Agreement on Tariffs and Trade (GATT) 1994, art XX.

[65] Rudolf Dolzer and Christoph Schreuer, Principles of International Investment Law (2nd edn, Oxford University Press 2012).

[66] Stephan W Schill, The Multilateralization of International Investment Law (Cambridge University Press 2009).

investment protection. Achieving a more lasting balance also requires investment policies which are capable of encouraging environmentally responsible economic activity while maintaining investor confidence and economic development objectives.[67]

### D. Balancing Investors and Environment Protection

Another way to balance investors' rights and environmental protection is to create incentives for FDI so that it encourages more environmentally friendly practices. These incentives could include tax benefits for using green technologies, subsidies for sustainable development projects, or even a preferential treatment for investments aligned with environmental objectives.[68] These actions would foster economic advancement while reducing environmental impact, making certain that investments support both progress and sustainability.[69] Moreover, an increased number of active climate policies correlates with greater inflows of green FDI. Suggesting that climate policies and environmental protection measures are not necessarily linked to lower levels of non-green investments projects.[70]

Balancing investor protection with environmental governance requires moving past the traditional perception that environmental regulation necessarily discourages foreign investment. More studies indicate that sustainable regulatory frameworks and climate policies could attract environmentally responsible investment rather than hinder economic activity.[71] As global environmental concerns amplify, investors themselves are gradually considering environmental, social, and governance (ESG) factors when they make investment decisions. Consequently, environmental

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[67] Organisation for Economic Co-operation and Development (OECD), FDI Qualities Policy Toolkit (2022).
[68] FitzGerald, V., 2002. Regulatory Investment Incentives. QEH Working Paper Series – QEHWPS80. University of Oxford. Available at: http://www.qeh.ox.ac.uk
[69] Pienknagura, S., 2024. Climate policies as a catalyst for green FDI. International Monetary Fund Working Paper. Available at: https://www.imf.org/en/Publications/WP/Issues/2024/03/01/Climate-Policies-as-a-Catalyst-for-Green-FDI-54545
[70] Ibid.
[71] OECD, FDI Qualities Indicators: Measuring the Sustainable Development Impacts of Investment (2019).

protection and investment promotion should not necessarily be seen as conflicting objectives.

One important mechanism for reaching this balance is the promotion of green foreign direct investment. Green FDI refers to investment projects that contribute to environmental sustainability, renewable energy development, low-carbon technologies, and environmentally responsible industrial practices.[72] Several States are adopting policies aimed at attracting sustainable investment through financial incentives, subsidies, tax benefits, and preferential regulatory treatment for environmentally friendly projects.

Moreover, international organisations are encouraging the alignment of investment governance with climate and sustainable development objectives. The United Nations Conference on Trade and Development (UNCTAD) points out that investment policy should support sustainable development, and at the same time preserve regulatory flexibility for States.[73] Similarly, the Organisation for Economic Co-operation and Development (OECD) promote investment frameworks that encourage responsible business conduct and environmentally sustainable economic growth.[74]

The integration of environmental obligations into investment treaties may also help to balance investor rights with environmental protection. Traditionally, BITs focused more on investor protections without imposing corresponding obligations on foreign investors. However, recent investment agreements recognise that investors have responsibilities relating to environmental compliance, corporate social responsibility, and sustainable development standards.[75] This shifting approach shows a broader transformation in international investment law toward greater accountability and sustainability.

[72] UNCTAD, World Investment Report 2023: Investing in Sustainable Energy for All (United Nations 2023).
[73] UNCTAD, Investment Policy Framework for Sustainable Development (2015).
[74] OECD, FDI Qualities Policy Toolkit (2022).
[75] Morocco–Nigeria Bilateral Investment Treaty (2016).

Furthermore, balancing environmental governance with investor protection necessitates that arbitral tribunals adopt more coherent approaches when interpreting investment treaty obligations. More and more tribunals recognise that States have a legitimate right to regulate in the public interest, especially regarding environmental protection and public health.[76] Further recognition of this regulatory autonomy may lead to less tensions between precautionary environmental measures and investment protection standards.

Ultimately, the coexistence of environmental precaution and foreign investment protection depends on how investment governance frameworks get developed and how they are capable of integrating sustainability objectives into economic regulation. Through clearer treaty drafting, sustainable investment incentives, and a more balanced arbitral interpretation, the precautionary principle can function alongside international investment protection while supporting long-term environmental governance and sustainable development objectives.

The gradual evolution of international investment law demonstrates a rising recognition that environmental protection and foreign investment should not be treated as mutually exclusive objectives. Although there are still serious legal tensions regarding the incorporation of the precautionary principle into BITs, recent developments in treaty drafting, arbitral practice, and sustainable investment governance suggest that a more balanced relationship between environmental regulation and investor protection is progressively emerging.[77]

## VII. SUGGESTIONS AND RECOMMENDATIONS

In light of the foregoing analysis, the following suggestions are proposed:

1. BITs should include a clear definition of the precautionary principle, preferably anchored in the formulation contained in Principle 15 of the Rio Declaration, so that precautionary measures may be adopted where there is a risk of serious or irreversible environmental harm despite scientific uncertainty.

[76] Philip Morris Brands Sàrl v Uruguay, ICSID Case No ARB/10/7, Award (2016).
[77] United Nations Conference on Trade and Development (UNCTAD), World Investment Report 2023: Investing in Sustainable Energy for All (United Nations 2023).

2. Investment treaties should expressly recognise the regulatory autonomy of host States to adopt non-discriminatory environmental, public health, and climate-related measures in good faith.
3. BITs should incorporate general exception clauses modelled on GATT Article XX, particularly for measures necessary to protect human, animal, or plant life or health, provided such measures are not applied arbitrarily or as disguised restrictions.
4. Treaty provisions on fair and equitable treatment and indirect expropriation should be drafted with sufficient precision to prevent legitimate precautionary regulation from being automatically characterised as a treaty breach.
5. States should promote green FDI through targeted incentives, including tax benefits, subsidies, and preferential treatment for investments that support renewable energy, low-carbon technologies, and sustainable development.

## VIII. CONCLUSION

The integration of the precautionary principle (PP) into Bilateral Investment Treaties (BITs) provides a potential pathway for reconciling environmental protection with foreign investment protection. As environmental degradation and climate-related challenges continue to intensify, States increasingly face pressure to adopt preventive environmental measures while simultaneously maintaining favourable conditions for foreign direct investment. In this context, the precautionary principle offers an important legal mechanism allowing governments to respond to environmental risks even in situations characterised by scientific uncertainty.

This paper demonstrated that the precautionary principle initially emerged within international environmental law before progressively influencing broader areas of international economic governance, including international trade and investment law. The principle has gradually entered modern investment treaty practice through sustainable development provisions, environmental clauses, and references to the regulatory autonomy of States. However, its incorporation into Bilateral Investment Treaties remains cautious and fragmented. The absence of a universally accepted definition of the precautionary principle, combined with concerns relating to legal certainty and investor protection, continues to generate important legal tensions within international investment law.

Furthermore, the interaction between precautionary environmental measures and traditional investment protection standards such as fair and equitable treatment and indirect expropriation remains particularly complex. Investment arbitration cases illustrate the continuing challenge of balancing regulatory autonomy with investor rights. Nevertheless, recent arbitral practice increasingly recognises the legitimate right of States to regulate in the public interest, particularly in matters relating to environmental protection and public health. This evolution suggests a gradual shift toward more balanced interpretations of investment treaty obligations.

The paper also highlighted the growing importance of treaty reform and sustainable investment governance in addressing these challenges. Clear treaty drafting, explicit environmental provisions, and the incorporation of "right to regulate" clauses may reduce legal uncertainty and strengthen the compatibility between environmental governance and investment protection. Similarly, promoting green foreign direct investment through incentives such as tax benefits, subsidies, and sustainable investment policies may encourage environmentally responsible economic development without undermining investor confidence.

Ultimately, the evolution of international investment law demonstrates that environmental protection and foreign investment should not necessarily be viewed as contradictory objectives. Through clearer legal frameworks, balanced arbitral interpretation, and increased integration of sustainability considerations into investment governance, the precautionary principle may progressively function as an effective mechanism for aligning economic development with environmental sustainability. In this way, the principle can contribute to ensuring long-term benefits for States, investors, and the environment while supporting the broader objectives of sustainable development.

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