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The Role of the Precautionary and Polluter Pays Principles in Assessing Compensation

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Abstract

The upsurge of investment treaties and cases of investment arbitration demonstrates the dramatic growth of foreign investment laws in the past few decades. Also, due to the ongoing negotiation of the "mega" free trade agreements, this field of law has received an increasing amount of recognition. This recognition, however, is accompanied by a growing concern over whether investment arbitration has reduced the scope for state regulation. A major source of concern is the lack of consistency between arbitral tribunals in balancing investment protection against the public interests of host states. Against this background, this paper addresses the question of how to properly balance the interests of foreign investors against environmental concerns, focusing on the remedy phase of legal disputes. It is argued that there are cases where, even if the host state is found to have breached investment protection obligations, the awarding of full compensation is inappropriate, and this applies to those that involve difficult balancing between public interest such as environmental protection, and the protection of foreign investment. Based on these considerations, this paper proposes that the precautionary principle and the polluter pays principle—widely accepted international environmental principles—may provide other grounds for awarding partial compensation.

Keywords: Investment arbitration, Polluter pays principle, Precautionary principle, Partial compensation

JEL Classification: K2

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1. Introduction

Few would deny that the investment arbitration system has now become one of the most conspicuous international dispute settlement forums. It may even be regarded as highly successful if we measure the success of a dispute settlement forum by the number of cases it receives. According to the United Nations Conference on Trade and Development (UNCTAD) World Investment Report 2015, the total number of known investment arbitration cases is 608.[1] As of the end of 2014, the International Centre for the Settlement of Investment Disputes (ICSID) had registered 497 cases under the ICSID Convention and Additional Facility Rules.[2]

The large volume of cases does not, however, mean that investment arbitration has received broad support and trust in the international community. On the contrary, it has increasingly faced severe criticism and skepticism in recent years. The distrust of the investor-to-state dispute settlement (ISDS) has resulted in withdrawal from the ICSID Convention[3] and termination of international investment agreements (IIAs) by several countries.[4] Recent discussions regarding ISDS in the context of the negotiation of the Transatlantic Trade and Investment Partnership (TTIP), where concerns over ISDS raised in both the European Union and the United States most vividly demonstrate this point. For example, in May 2015, the European Economic and Social Committee adopted the "Opinion on Investor Protection and Investor to State Dispute Settlement in EU Trade and Investment Agreements with Third Countries", in which it expressed its concern over ISDS that "[i]n some prominent cases it has become a lobbying tool where the very threat of litigation creates a regulatory chill which inhibits legislators pursuing legitimate public interest policies".[5] Notably, in the US, eminent law and economics

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[1] UNCTAD, *World Investment Report 2015: Reforming International Investment Governance*, (June 2015) available at: http://unctad.org/en/PublicationsLibrary/wir2015_en.pdf (at xi). UNCTAD, *IIA Issues Note: Recent Trends in IIAs and ISDS* (February 2015) available at: http://unctad.org/en/PublicationsLibrary/webdiaepcb2015d1_en.pdf (at 5).

[2] ICSID, *The ICSID Caseload – Statistics (Issue 2015-1)* available at: https://icsid.worldbank.org/apps/ICSIDWEB/resources/Documents/ICSID%20Web%20Stats%202015-1%20(English)%20(2)_Redacted.pdf.

[3] They include Bolivia (denunciation effective November 2007), Ecuador (denunciation effective January 2010), and Venezuela (denunciation effective July 2012).

[4] For example, it is reported that South Africa has served notices of termination of Bilateral Investment Treaties (BITs) on approximately 13 states (*Challenging the status quo – South Africa's termination of its bilateral trade agreements* (December 2014), available at: https://www.dlapiper.com/ja/japan/insights/publications/2014/12/international-arbitration-newsletter-q4-2014/challenging-the-status-quo/).

[5] Opinion of the European Economic and Social Committee on Investor protection and investor to state dispute settlement in EU trade and investment agreements with third countries, adopted on 27 May 2015, available at: http://www.eesc.europa.eu/?i=portal.en.rex-opinions.35922, paras. 1.7, 1.21.

scholars issued a letter to the US Congress expressing concerns that ISDS "weakens the rule of law by removing the procedural protections of the legal system and using a system of adjudication with limited accountability and review". The letter further requested that Congress "ensure(s) ISDS is excluded from upcoming trade agreements".[6]

With this background lies the fact that investment arbitration tribunals actually perform a function similar to a 'judicial review' by domestic courts. As investor-state disputes have evolved from traditional expropriation cases to conflicts arising out of regulatory interference with various aspects of the investment, they have become a dispute settlement forum that actually reviews government actions taken in the public interest.[7] The following remarks by the EU Trade Commissioner summarise these concerns well. "I want the rule of law, not the rule of lawyers. I want to ensure fair treatment for EU investors abroad, but not at the expense of governments' right to regulate".[8]

See also, European Commission, Commission Staff Working Document, *Report: Online Public Consultation on Investment Protection and Investor-to-State Dispute Settlement (ISDS) in the Transatlantic Trade and Investment Partnership Agreement (TTIP)* (13 January 2015) available at: http://trade.ec.europa.eu/doclib/docs/2015/january/tradoc_153044.pdf; European Commission, Concept Paper, *Investment in TTIP and Beyond – the Path for Reform*, available at: http://trade.ec.europa.eu/doclib/docs/2015/may/tradoc_153408.PDF.

[6] Letter from Professors Judith Resnik, Cruz Reynoso, H. Lee Sarokin, Joseph E. Stiglitz and Laurence H. Tribe on 30 April 2015, available at: http://www.washingtonpost.com/r/2010-2019/WashingtonPost/2015/04/30/Editorial-Opinion/Graphics/oppose_ISDS_Letter.pdf. With respect to the Trans Pacific Partnership Agreement (TPP), Stiglitz criticises the process of its negotiations as non-transparent and raises concerns over the 'inequality' it may bring: "[c]orporations may profit … [b]ut the well-being of ordinary citizens is likely to take a hit". J. Stiglitz, *On the Wrong Side of Globalization*, The New York Times, 15 May 2014, available at: http://opinionator.blogs.nytimes.com/2014/03/15/on-the-wrong-side-of-globalization/?_r=0

[7] B. Kingsbury, N. Krisch, and R. B. Stewart, *The Emergence of Global Administrative Law* (2005) 68 Law and Contemporary Problems 15, 36–37; G. Van Harten, *Investment Treaty Arbitration and Public Law* (Oxford University Press, 2007) Chapter I; William W. Burke-White and Andreas von Staden, *Private Litigation in a Public Law Sphere: The Standard of Review in Investor-State Arbitrations* 35 Yale Journal of International Law (2010) pp. 283-346 at 284-296; Robin F. Hansen, *Parallel Proceedings in Investor-State Treaty Arbitration: Responses for Treaty-Drafters, Arbitrators and Parties* 73(4) MRL (2010) pp. 523-550 at 528. Burke-White and Staden define public law arbitrations as "arbitrations for which the critical issue on which the outcome turns to be whether the state has the power and legal ability to undertake regulation in the public interest" (ibid. at 285).

[8] Blog Post by Cecilia Malmström, *Investments in TTIP and Beyond - Towards an International Investment Court*, available at: http://ec.europa.eu/commission/2014-2019/malmstrom/blog/investments-ttip-and-beyond-towards-international-investment-court_en. See also, the letter from J. Resnik et al. (n. 6): "Although ISDS tribunals are not empowered to order injunctive relief, the threat and expense of ISDS proceedings have forced nations to abandon important public policies". On 'the rule of lawyers', Van Harten also points out that "investment treaty arbitration does not incorporate conventional safeguards of judicial independence such as secure judicial tenure, objective methods of appointment of judges to specific

Moreover, the fact that investment treaty arbitration is the combination of a variety of different investment treaties and arbitral tribunals, raises concerns over the lack of legal certainty and predictability in the dispute settlement system. Waibel et al. identify the concerns over investment arbitration as follows:

> Contentions that the international investment regime lacks legitimacy come from many directions. Some suggest that ad hoc tribunals produce inconsistent law, which undermines the ultimate goals of stability and predictability. Others point to the reduced scope for state regulation. Still others claim that the regime is systematically biased in favor of business interests and capital exporting states. Another concern is that the regime leads to the reverse discrimination of domestic investors. Finally, some contend that the regime imprudently uses private commercial dispute resolution tools to resolve public disputes. These are telling signs of the turbulent climate for investment arbitration.[9]

However, it is in fact not the actual 'bias' on the part of investment arbitration tribunals, but the lack of consistent reasoning that sufficiently demonstrates their deferential approach that lies behind such concerns. It is aptly observed that:

> The most persistent and troubling adjudicatory flaw is not … a crude pro-investor bias. The real concern lies in the choice of hermeneutics and especially the stubborn tendency to preference outcome over process in reasoning (as is often naturally the case in commercial arbitration). Those practices are problematic for several reasons, not least the obvious failure of many arbitral tribunals to follow the interpretative taxonomy mandated by the Vienna Convention on the Law of Treaties (VCLT).[10]

Indeed, statistics by UNCTAD and ICSID on the outcomes of the known cases of investment arbitration indicate that a larger number of cases were decided in favour of the host state than in favour of investors. For example, the UNCTAD World Investment Report 2015 states that:

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cases, and restrictions on outside remuneration by the judge" (G. Van Harten, *Arbitrator Behaviour in Asymmetrical Adjudication: An Empirical Study of Investment Treaty Arbitration*, 50(1) Osgoode Hall Law Journal (2012) pp. 211-268 at 218).

[9] M. Waibel, A. Kaushal, Kyo-Hwa Liz Chung, and C. Balchin, *The Backlash against Investment Arbitration: Perceptions and Reality*, in M. Waibel et al. (eds) *The Backlash against Investment Arbitration* (Kluwer Law International (2010) xxxviii).

[10] J. Kurtz, *The Shifting Landscape of International Investment Law and Its Commentary* (Review Article for K. J. Vandevelde, *Bilateral Investment Treaties: History, Policy, and Interpretation* (Oxford University Press, 2010); J. W. Salacuse, *The Law of Investment Treaties* (Oxford University Press, 2010); and S. W. Schill (ed) *International Investment Law and Comparative Public Law* (Oxford University Press, 2010)) 106(3) AJIL (2012) pp. 686-694 at 688.

> Out of these (405 concluded cases), 36 per cent (144 cases) were decided in favour of the State (all claims dismissed either on jurisdictional grounds or on the merits), and 27 per cent (111 cases) ended in favour of the investor (monetary compensation awarded). Approximately 26 per cent of cases (105) were settled and 9 per cent of claims (37) discontinued for reasons other than settlement (or for unknown reasons). In the remaining 2 per cent (8 cases), a treaty breach was found but no monetary compensation was awarded to the investor.[11]

Nevertheless, due to the lack of clear and coherent reasoning that demonstrates the tribunals' efforts to balance public interests with the protection of foreign investments, the outcomes, however fair, are insufficient to address the distrust of investment arbitration as a whole. Therefore, what is required is clear guidance on *how* such a balance should be sought.

This paper addresses this issue focusing on: (a) the balance between the interests of foreign investors and environmental concerns; and (b) the remedy phase of legal disputes. Once the liability of the host state is established, the concern of the parties is how much they may receive or how much they have to pay.[12] There are cases where, even if the host state is found to have breached investment protection obligations, awarding full compensation is inappropriate, and this applies to cases that involve difficulty in balancing between public interests, such as environmental protection, and the protection of foreign investments. In other words, the investment-environment balance should be considered not only at earlier stages but also at the remedy stage, and partial compensation is indeed an effective way to make the outcome less of an all-or-nothing proposition. Certainly, there are cases where arbitral tribunals awarded partial compensation in investment arbitration. Yet, for want of clear and objective criteria, they are sometimes criticised as non-transparent exercises of a tribunal's

[11] UNCTAD, "World Investment Report 2015" (n. 1) at 116. According to the ICSID statistics, the ratios are as follows: an award upholding claims in part or in full (46%); an award dismissing all claims (28%); an award declining jurisdiction (25%); and an award determining that the claims are manifestly without legal merit (1%). ICSID, "The ICSID Caseload" (n. 2) at 14. It should be noted, however, that these statistics have different implications, as illustrated by the following UNCTAD report results: "despite the oft-heard refrain that 'states "win" more often than they lose,' it is the investors that have actually won most of the time: 72 per cent of the decisions on jurisdiction, and 60 per cent of cases decided on the merits" (H. Mann, *ISDS: Who Wins More, Investors or States?*, International Institute for Sustainable Development, Investment Treaty News: Breaking News Analysis (June 2015) available at: http://www.iisd.org/itn/wp-content/uploads/2015/06/itn-breaking-news-june-2015-isds-who-wins-more-investors-or-state.pdf).

[12] I. Marboe, *Calculation of Compensation and Damages in International Investment Law* (Oxford University Press, 2009) 2.

discretion, failing to demonstrate the proper balancing process (see Section II below).

Against this background, this paper proposes that, for cases that involve environmental issues, the precautionary principle and the polluter pays principle may provide other grounds for awarding 'partial' compensation.[13] It also argues that this approach, if effectively implemented, will provide clearer and more objective criteria for partial compensation than those approaches found in existing case law. This paper is structured as follows. Section II demonstrates the possibility of awarding partial compensation in investment treaty arbitration through the examination of case law. Section III first provides a brief summary of the precautionary and polluter pays principles (III.1) and then demonstrates that they may provide a theoretical basis for the reduction of compensation when the investment-environment balance is at issue (III.2). Section IV applies the theory to a specific case with the following question in mind: If the tribunals had taken into account these environmental principles in the process of interpretation, would any practical effect on their approach have resulted? For this analysis, the classic *Santa Elena v. Costa Rica* case[14] is revisited. While the tribunal's pronouncement on the investment-environment relationship in this case has been endorsed by subsequent tribunals, it is also criticised for not being "premised on an approach that treats the protection of private property rights and the protection of the environment in an integrated manner".[15] It is argued that the aforementioned environmental principles may well have altered the tribunal's approach in determining the amount of compensation. Section V concludes this paper by examining how to effectively implement this theory in a practical setting.

2. Partial compensation in investment arbitration

This section first demonstrates the appropriateness of awarding partial compensation in investment arbitration. Waelde and Sabahi point out the desirability of partial compensation as a way to balance public interest and the protection of foreign investments:

> Probably, the proper course is to reduce full compensation (or enhance

[13] For the purposes of this paper, the concept of 'partial compensation' includes the approximation of compensation and the subsequent reduction of the amount of compensation.
[14] ICSID, *Compañía del Desarrollo de Santa Elena, S.A. v. Costa Rica*, ICSID Case No. ARB/96/1, Award of 17 February 2000.
[15] P. Sands, *Litigating Environmental Disputes: Courts, Tribunals, and the Progressive Development of International Environmental Law*, in T. Malick Ndiaye and R. Wolfrum (eds), *Law of the Sea, Environmental Law, and Settlement of Disputes: Liber Amicorum Judge Thomas A. Mensah* (Brill, 2007) 324.

> partial compensation) by taking into account the relative legitimacy of the state's regulation (intention, good faith, legitimate purposes pursued, proportionality of measure and purpose) on one hand and the investor's special hardship (e.g. disappointment of legitimate expectation on property; good-faith efforts to come to a solution; time and trouble to find a replacement purpose for the property; or finding another property) on the other.[16]

Investment arbitration tribunals have awarded partial compensation by adjusting, or reducing, the amount of compensation in certain circumstances, as demonstrated below. The question is on what grounds tribunals may do so, because (unlike the European Court of Human Rights (ECHR))[17] most investment treaties do not explicitly authorise partial compensation. Tribunals have based their decisions to award partial compensation primarily on the following grounds: equitable considerations; the conduct of investors, such as the failure to mitigate losses; the principle of 'contributory negligence' on the part of the investor; and adjustments in light of other international obligations.[18] Each of these is explained in detail below.

2.1 Equitable considerations

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[16] T. W. Waelde and B. Sabahi, *Compensation, Damages, and Valuation*, in P. Muchlinski, F. Ortino, and C. Schreuer (eds), *The Oxford Handbook of International Investment Law* (Oxford University Press, 2008) 1081. Although speaking outside the context of investment treaty arbitration, Brownlie also argues that a rigid rule for full compensation "would in reality render any major economic or social programme impossible, which would be contrary to the principles of self-determination, independence, sovereignty, and equality" (I. Brownlie, *Principles of Public International Law* (7th ed., Oxford University Press, 2008) 513).

[17] Article 1 of the Protocol to ECHR explicitly states that the determination of compensation is "subject to the conditions provided for by law and by the general principles of international law". Partial compensation in cases of lawful expropriations is common in the jurisprudence of the ECHR where the Court has held that the legitimate objectives of 'public interest' may justify reimbursement of less than the full market value of the assets taken. *James and Others v. UK*, ECHR, Judgment of 21 February 1986 (1986) 8 EHRR 123 para. 48. For other European Court of Human Rights cases, see S. Ripinsky and K. Williams, *Damages in International Investment Law* (British Institute of International and Comparative Law, 2008) 81-82; H. R. Fabri, *The Approach Taken by the European Court of Human Rights to the Assessment of Compensation for "Regulatory Expropriations" of the Property of Foreign Investors*, 11 New York University Environmental Law Journal, 2002, 165-166.

[18] There are also cases where the tribunals reduced the amount of compensation because the host state successfully invoked the 'necessity' defense (e.g. ICSID, *LG&E v. Argentina*, ICSID Case No. ARB/02/1, decision on liability of October 3, 2006, paras. 226-266). Strictly speaking, however, these are not cases where partial compensation was awarded, because in these cases the host states were exempted from "liability" for a certain period of time, and in this sense compensation that corresponds to 'partial liability' was awarded.

In *Azurix v. Argentina*, in which compensation based on the fair market value (FMV) of the Concession was adopted as appropriate for multiple breaches of treaty obligations including expropriation,[19] the tribunal stated that "a significant adjustment is required to arrive at the real value of the Canon paid by the Claimant".[20] It concluded that "no more than a fraction of the Canon could realistically have been recuperated under the existing Concession Agreement", considering that (1) the FMV should be determined according to what an independent and well-informed third party would have been willing to pay for the Concession, and (2) such third party would have been aware of the unstable situation surrounding the Concession.[21] In *AMT v. Zaire*, in which compensation for a breach of full protection and security was at issue, the tribunal stated that it must "take into account the existing conditions of the country and not by making abstraction based on a criterion for the assessment which does not correspond at all to the reality, nor the current happenings in Zaire".[22] It also referred to the role of equitable considerations and the tribunal's discretionary power to determine the quantum of compensation, taking into account all the circumstances of the case.[23]

2.2. Conduct of investors

In *Middle East Cement v. Egypt*, the tribunal accepted that an investor's duty to mitigate damages can be considered to be "part of the General Principles of Law which, in turn, are part of the rules of international law which are applicable in this dispute according to Art. 42 of the ICSID Convention", even though such a duty was not expressly mentioned in the Greece/Egypt BIT.[24] With regard to the facts, however, the tribunal did not find that the investor was under a duty to mitigate, and therefore concluded that the claims did "not have to be reduced due to a duty to mitigate".[25] More recently, in *EDFI v. Argentina*, the tribunal stated that "[t]he duty to mitigate damages is a well-established principle in investment arbitration", citing the statement referenced

[19] ICSID, *Azurix Corp v. Argentine Republic*, ICSID Case No ARB/01/12, Award of 14 July 2006, para. 420.
[20] Ibid., para. 425.
[21] Ibid., paras. 426-429.
[22] ICSID, *American Manufacturing and Trading, Inc. v. Zaire*, ICSID Case No ARB/93/1, Award of 21 February 1997, paras. 7.13-7.15.
[23] Ibid., paras. 7.16, 7.21.
[24] ICSID, *Middle East Cement v. Egypt*, ICSID Case No. ARB/99/6, Award of 12 April 2002, paras. 167-171. See also, *Iurii Bogdanov, Agurdino - Invest Ltd. and Agurdino-Chimia JSC v. Moldova*, SCC, Award of 22 September 2005, para. 5.2; B. Sabahi, *Compensation and Restitution in Investor-state Arbitration: Principles and Practice* (Oxford University Press, 2011) 176-7.
[25] ICSID, *Middle East Cement v. Egypt* (Ibid.) paras. 170-1.

above by the *Middle East Cement v. Egypt* tribunal.[26] Applying this principle to the facts of the case, the tribunal concluded that the claimant investors failed to take reasonable steps to minimize damages,[27] and thereby failed to comply with their duty to mitigate damages.[28] Accordingly, the tribunal subtracted 50% of the value of their participation in EDEMSA from the amount of damages to be awarded.[29]

2.3. The principle of contributory negligence on the part of the investor

In the international law context, the principle of contributory negligence is endorsed in Article 39 of the International Law Commission Articles on State Responsibility.[30] The Annulment Committee in *MTD v. Chile* stated that although Article 39 is concerned with claims between States ("though it includes claims brought on behalf of individuals"), "[t]here is no reason not to apply the same principle of contribution to claims for breach of treaty brought by individuals".[31] In *MTD v. Chile*, the failure of the investors to adequately assess the investment risk led to a reduction in the damages. The tribunal found that the investors "had made decisions that increased their risks in the transaction and for which they bear responsibility, regardless of the treatment given by Chile to the Claimants", and concluded that "the Claimants should bear part of the damages suffered and the Tribunal estimates that share to be 50% after deduction of the

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[26] ICSID, *EDF International S.A., SAUR International S.A. and León Participaciones Argentinas S.A. v. Argentine Republic*, ICSID Case No.ARB/03/23, Award of 11 June 2012, paras. 1302-3.

[27] This failure refers to the fact that although the renegotiation between the government and EDEMSA (an Argentine gas company controlled by the claimant's consortium) was in progress, the claimant sold the investment in EDEMSA to IADESA without including any provision in the share purchase agreement "for the case that the renegotiation ended up with a tariff increase and/or any other measure that might re-establish all or part of the enterprises' potential value". Ibid., paras. 1296 and 1310.

[28] Ibid., para. 1310.

[29] Ibid., para. 1312. Other investment arbitration cases in which the duty to mitigate damages was discussed include: ICSID, *AIG Capital Partners, Inc. and CJSC Tema Real Estate Company Ltd. v. Kazakhstan*, ICSID Case No. ARB/01/6, Award of 7 October 2003; *National Grid plc v. Argentina*, UNCITRAL, Award of 3 November 2008.

[30] "In the determination of reparation, account shall be taken of the contribution to the injury by willful or negligent action or omission of the injured State or any person or entity in relation to whom reparation is sought". See also, Sabahi (n. 24) 175-6; W. Sadowski, *Yukos and Contributory Fault*, TDM Advance Publication (October 2014) available at: http://www.transnational-dispute-management.com/journal-advance-publication-article.asp?key=545, 1-4.

[31] ICSID, *MTD Equity Sdn. Bhd. and MTD Chile S.A. v. Chile*, ICSID Case No. ARB/01/7, Decision on Annulment of 21 March 2007, para. 99 (citing International Law Commission Articles on State Responsibility, Article 33(2) and commentary, para. (4)). For more information on the view that certain qualifications may be necessary to such an approach, see Sadowski (Ibid.) 28-36.

residual value of their investment calculated".[32] The ad hoc annulment committee, refusing to annul this decision, stated that: "the Tribunal had a corresponding margin of estimation" on this issue, and in the circumstances of the case, "it is not unusual for the loss to be shared equally".[33]

In *Occidental v. Ecuador II* (in which the claimants were awarded approximately 17.7 billion USD), the tribunal reduced the amount of compensation awarded by 25% on the grounds that "as a result of their material and significant wrongful act, the Claimants have contributed to the extent of 25% to the prejudice which they suffered…" and that the resulting apportionment (25% and 75%) was "fair and reasonable in the circumstances of the present case".[34] Arbitrator Stern, in her dissenting opinion, argued that the majority underestimated the contribution of the claimants to the damage, and that in this case, "the split 50/50 would have been even more justified [than the *MTD v. Chile* case], as the Claimants have acted both very imprudently and illegally".[35] Most recently, the concept of contributory negligence resulted in the reduction of the amount of compensation by 25% in the *Yukos v. Russia* cases[36] in which the tribunal ordered Russia to pay approximately 50 billion USD to the majority shareholders of OAO Yukos Oil Company (Yukos). These cases, which the tribunal described as "mammoth arbitrations",[37] arose out of various measures taken by Russia against Yukos that resulted in the demise of the latter.[38] The claimants argued that these measures constituted a breach of Articles 10(1)[39] and 13(1) (pertaining to expropriation) of the

[32] ICSID, *MTD Equity Sdn. Bhd. and MTD Chile S.A. v. Chile*, ICSID Case No. ARB/01/7, Award of 24 May 2004, paras. 242-243. Vinuales observes that, in this case, the tribunal reduced the amount of compensation "to take into account the degree of diligence or reasonableness of the investor" (J. E. Vinuales, *Foreign Investment and the Environment in International Law: an Ambiguous Relationship*, British Yearbook of International Law, 2010, 328).
[33] ICSID, *MTD v. Chile* (award) (Ibid.) para. 101.
[34] ICSID, *Occidental v. Ecuador II*, ICSID Case No. ARB/06/11, Award of October 5, 2012, para. 687
[35] Dissenting opinion of Arbitrator Stern, para. 7.
[36] *Veteran Petroleum Limited (Cyprus) v. Russia*, UNCITRAL, PCA Case No. AA 228, Final Award of 18 July 2014; *Hulley Enterprises Limited (Cyprus) v. Russia*, UNCITRAL, PCA Case No. AA 226, Final Award of 18 July 2014 and *Yukos Universal Limited (Isle of Man) v. Russia*, UNCITRAL, PCA Case No. AA 227, Final Award of 18 July 2014 (collectively, the 'Yukos awards').
[37] Yukos awards, para. 4.
[38] Such measures include "criminal prosecutions, harassment of Yukos, its employees and related persons and entities; massive tax reassessments, VAT charges, fines, asset freezes and other measures against Yukos to enforce the tax reassessments; the forced sale of Yukos' core oil production asset; and other measures culminating in the bankruptcy of Yukos in August 2006, the subsequent sale of its remaining assets, and Yukos being struck off the register of companies in November 2007" (Yukos awards, para. 63).
[39] Article 10(1) of the ECT requires the contracting states "to accord at all times to Investments of Investors of other Contracting Parties fair and equitable treatment. Such Investments shall also enjoy the most constant protection and security and no Contracting Party shall in any way impair by

Energy Charter Treaty (ECT). Russia denied any breach of the ECT, and contended that the tax reassessments were a consequence of Yukos' activities relating to a tax fraud scheme, in particular, its abuse of the low-tax region program by establishing sham 'trading companies' in the region.[40] At the liability phase, the tribunal found, *inter alia*, that:

> [W]hile Yukos was vulnerable on some aspects of its tax optimization scheme, and possibly even would have faced 'substantial tax claims' that might have resulted in 'significant losses', principally because of the sham-like nature of some elements of its operations in at least some of the low-tax regions, the State apparatus decided to take advantage of that vulnerability by launching a full assault on Yukos and its beneficial owners in order to bankrupt Yukos and appropriate its assets while, at the same time, removing Mr. Khodorkovsky from the political arena.[41]

The tribunal concluded that the measures adopted by Russia with respect to Yukos had an effect 'equivalent to nationalization or expropriation' that did not meet the conditions for lawful expropriation, and therefore Russia was in breach of its treaty obligations under Article 13 of the ECT.[42]

At the remedy phase, however, the tribunal reduced the amount of damages awarded to the claimants by 25%, which resulted in the reduction of the award from USD 66.7 billion to USD 50 billion. The tribunal stated that:

> While the Tribunal has concluded, on the basis of the totality of the evidence, that Respondent's tax assessments and tax collection efforts against Yukos were not aimed primarily at the collection of taxes, but rather at bankrupting Yukos and facilitating the transfer of its assets to the State, it cannot ignore that Yukos' tax avoidance arrangements in some of the low-tax regions made it possible for Respondent to invoke

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unreasonable or discriminatory measures their management, maintenance, use, enjoyment or disposal".

40 Yukos awards, paras. 93 and 109.

41 Yukos awards, para. 515. This finding contrasts the findings of the ECHR in *Khodorkovsky and Lebedev v. Russia* in that "none of the accusations against them concerned their political activities *stricto sensu*, even remotely". *Case of Khodorkovsky and Lebedev v. Russia*, Application Nos. 11082/06 and 13772/05, ECHR, Judgment of 25 July 2013, para. 906. See also, *Case of OAO Neftyanaya Kompaniya Yukos v. Russia*, Application No. 14902/04, ECHR, Judgment of 31 July 2014, para. 665. For criticism of the Yukos tribunal's finding of a political motive, see S. Nappert, *Mammoth Arbitrations: the Yukos Awards of 18 July 2014*, TDM Advance Publication, October 2014.

42 Yukos awards, paras. 1580-1585.

> and rely on that conduct as a justification of its actions against Mr. Khodorkovsky and Yukos…. [T]he Tribunal concludes that there is a sufficient causal link between Yukos' abuse of the system in some of the low-tax regions and its demise which triggers a finding of contributory fault on the part of Yukos.[43]

It then concluded that:

> … [I]n the exercise of its wide discretion, finds that, as a result of the material and significant misconduct by Claimants and by Yukos [which they controlled] Claimants have contributed to the extent of 25 percent to the prejudice which they suffered as a result of Respondent's destruction of Yukos. The resulting apportionment of responsibility as between Claimants and Respondent, namely 25 percent and 75 percent, is fair and reasonable in the circumstances of the present case.[44]

It should be noted that the tribunal's application of contributory negligence in this case is criticised on the following grounds. First, there is no causality between the injury and the blameable conduct of Yukos. If, as the tribunal found, the tax proceedings were merely a pretext to expropriate Yukos, "the impact of the tax structure on the destruction of Yukos should be accepted as nil", and "the clearly disproportionate reaction of Russia would have trumped the implications of (such) causality".[45] Second, "the estimation of contributory fault by way of proportional reduction of damages by a given percentage" would be much more than "the justifiable amount of Yukos re-assessed tax arrears".

2.4. Adjustments in light of other international obligations

In *SPP v. Egypt*, the tribunal rejected Egypt's argument that its obligations under the relevant investment agreements were inconsistent with its obligation under the Convention Concerning the Protection of the World Cultural and Natural Heritage (UNESCO Convention), on the grounds that the latter entered into force only after the former had been concluded and after the various permits had been issued by Egypt.[46] Nevertheless, the tribunal recognised the relevance of the obligations derived from the UNESCO Convention after 1979 (when Egypt nominated 'the pyramid fields' and the World Heritage Committee accepted that nomination, and thus the relevant international

43 Yukos awards, paras. 1614-1615.
44 Yukos awards, para. 1637.
45 Sadowski (n. 30).
46 ICSID, *SPP (ME) v. Egypt*, ICSID Case No. ARB/84/3, Award of 20 May 1992, paras. 151-157.

obligations emanating from the Convention became binding on Egypt)[47] in terms of determining the method for valuing the investment, i.e. rejecting the discounted cash flow (DCF) method. It first observed that the DCF method "would in effect award *lucrum cessans* through the year 1995 on the assumption that lot sales would have continued through that year", but such lot sales in the areas registered with the World Heritage Committee under the UNESCO Convention would have been illegal under both international law and Egyptian law after 1979.[48] The tribunal held that the allowance of *lucrum cessans* may only involve those profits that are legitimate and concluded that "even if the Tribunal were disposed to accept the validity of the Claimants' DCF calculations, it could award *lucrum cessans* until 1979",[49] because "[f]rom that date forward, the Claimants' activities on the Pyramids Plateau would have been in conflict with the Convention, and therefore in violation of international law, and any profits that might have resulted from such activities are consequently non-compensable".[50]

The examination of these cases reveals that investment arbitration tribunals have awarded partial compensation on various grounds including: equitable considerations; the principle of 'contributory negligence' on the part of the investor; and adjustments in light of other international obligations. As noted, awarding partial compensation is an effective way to balance the public interest of the host state and the protection of foreign investments, after the liability of the former has been established. It is also true that tribunals necessarily have certain discretion in the assessment of compensation given that, as Ripinsky and Williams point out, valuation is as much an art as it is a science, in which multiple variables may be taken into account.[51] At the same time, however, the exercise of such discretion by tribunals in the assessment of compensation has been subject to criticism for its lack of transparency and clarity. For example, with regard to the Yukos awards, Sadowski argues that the only yardstick for such proportional reduction of damages is 'the arbitrators' internal conviction of what is just and equitable in the given circumstances, and therefore this approach would be non-transparent and unpredictable.[52] Likewise, Sabahi and Ziyaeva argue that:

[47] Ibid., para. 154.
[48] Ibid., para. 190.
[49] As noted, the tribunal actually adopted the hybrid approach rather than the DCF method based on the 'out-of-pocket' expenses complemented by the value of lost commercial opportunity (paras. 198-218).
[50] *SPP (ME) v. Egypt* (n. 46), paras. 190-191.
[51] Ripinsky and Williams (n. 17) 212.
[52] Sadowski (n. 30). Other investment arbitration cases in which the concept of contributory

> [T]he process of reducing is far from perfect and perhaps dependent too much on the arbitrator's non-transparent exercise of "discretion." … As George Kahale reminded us, this level of discretion would make the arbitral decision-making resemble a Turkish "bazar" in which the arbitrators will be throwing percentages around as part of what is effectively a settlement negotiation process aimed at reaching a Solomonic number reminiscent of private commercial arbitration instead of the proper administration of justice.[53]

Having demonstrated the possibilities of awarding partial compensation and its problems in investment arbitration, the next section examines the potential role of the precautionary and polluter pays principles during the remedy phase. It will demonstrate that, where environmental measures are concerned, these principles may provide another basis for awarding partial compensation. It is also argued that, albeit in the limited context of environment-investment conflicts, these principles have the potential to provide a clearer and more objective criteria for partial compensation.

3. The role of the precautionary and polluter pays principles during the remedy phase

The rationale for awarding partial compensation to achieve a proper balance between public interest and the protection of foreign investments squarely applies to cases involving environmental issues. Fauchald argues that, where the investment project at issue caused actual environmental harm and if measures that ensure integration of the costs related to the environmental harm into the costs of the investment exist, there can be no question that such costs must be taken into account when determining the compensation. He then argues that, in the absence of such measures, case law from investment treaty arbitrations (such as *Santa Elena* and *Metalclad*) indicates the reluctance of tribunals to accept a reduction of compensation on the basis of the costs of cleaning up existing pollution or restoring the environment. It is submitted that the precautionary and polluter pays principles may reduce this reluctance by providing a

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negligence was discussed (but not applied, based on the finding of the facts) include: *Gemplus S. A., SLP S. A., Gemplus Industrial S. A. de C. V. v. Mexico*, ICSID Case No. ARB(AF)/04/3, Award of 16 June 2010; ICSID, *Ioan Micula, Viorel Micula et.al., v. Romania*, ICSID Case No.ARB/05/20, Award of 11 December 2013; *Anatolie Stati, Gabriel Stati, Ascom Group SA and Terra Raf Trans Traiding Ltd v. Kazakhstan*, SCC, Award of 19 December 2013.

[53] B. Sabahi and D. Ziyaeva, *Yukos v. Russian Federation: Observations on the Tribunal's Ruling on Damages*, TDM Advance Publication (June 2015), at 20, citing George Kahale, III, Keynote Speech, Eighth Annual Juris Investment Treaty Arbitration Conference, Washington, D.C., March 28, 2014.

theoretical basis for the reduction of compensation in such cases.

This section first provides a brief overview of these principles before examining their role in the context of awarding partial compensation.

3.1 The precautionary principle and the polluter pays principle: an overview

3.1.1 The precautionary principle

In the 1990s, the precautionary principle was recognised as a legal principle capable of general applicability in international law.[54] It was explicitly recognised in four out of the five instruments adopted in the United Nations Conference on Environment and Development (UNCED), namely, the Rio Declaration,[55] Agenda 21,[56] the United Nations Framework Convention on Climate Change (UNFCCC),[57] and the Biodiversity Convention.[58] Since then, it has been observed that "the precautionary concept has been included in virtually every recent treaty and policy document related to the protection and preservation of the environment",[59] and the principle is also a mandatory treaty principle in EU law by virtue of Article 191(2) of the Treaty on the Functioning of the European Union (ex Article 174(2) of the EC Treaty), which endorses the precautionary principle as a general principle. There are various definitions of the precautionary principle, ranging from the weak version that means that the lack of decisive evidence of harm should not be used as a basis for the postponement of measures[60] to the strong version that requires the reversal of the normal burden of proof

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[54] Bergen Ministerial Declaration on Sustainable Development in the ECE Region (UN Doc. A/CONF.151/PC/10 (1990)) (para. 7). J. Cameron and J. Abouchar, *The Status of the Precautionary Principle in International Law*, D. Freestone and E. Hey (eds), The Precautionary Principle and International Law: The Challenge of Implementation (Kluwer Law International, 1996) 28.

[55] Principle 15. This was to extend the precautionary principle to the all of the environment. P. Harremoes et al. (eds), The Precautionary Principle in the 20th Century: Late Lessons from Early Warnings (Earthscan, 2002) 5.

[56] Principles 17.1, 22.5(c).

[57] Article 3(3).

[58] Preamble. Article 8 also provides that an action to regulate or manage the relevant processes and categories of activities is required only where a significant adverse effect on biological diversity is determined pursuant to Article 7 (Identification and Monitoring).

[59] D. Freestone and E. Hey (eds), *The Precautionary Principle and International Law: The Challenge of Implementation* (Kluwer Law International, 1996) 3. The list includes, but is not limited to, the Bamako Convention (1991); the Convention for the Protection of the Marine Environment of the North-East Atlantic (1992) (OSPAR Convention); the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (1992) (Helsinki Water Convention); the Convention on the Protection of the Marine Environment of the Baltic Sea Area (1992) (Baltic Sea Convention); the Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Persistent Organic Pollutants (1998) (Aarhus Protocol on POPs).

[60] E.g. Principle 15 Rio Declaration; Article 3(3) UNFCCC.

(i.e. regulation is required unless potential polluters prove that their activities are not causing environmental harm).[61] Nevertheless, it is generally recognised that this principle consists of the following elements:[62] (i) clean production methods, best available technology, and best environmental practices must be applied; (ii) comprehensive methods of environmental and economic assessment must be used in deciding upon measures to enhance the quality of the environment; (iii) scientific and economic research that contributes to a better understanding of the long-term options available must be stimulated;[63] (iv) there is a shift of the burden of proof (in certain circumstances); and (v) there is a duty to environmentally educate and inform decision-makers.[64]

3.1.2. The polluter pays principle

Since the early 1990s, the polluter pays principle has been recognised in a number of international instruments as a binding principle or a guiding principle.[65] Principle 16

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[61] International instruments that stipulate a shift of the burden of proof include: the 1989 Oscom Decision 89/1 (14 June 1989) on the reduction and cessation of dumping industrial wastes at sea; the EC Commission, Communication from the Commission on the Precautionary Principle (2 February 2000) COM (2000) 1, Section 6.4; Article 3(3)(c) OSPAR Convention; para. 11(b) UNGA, World Charter for Nature (1982). See also, Wingspread Statement on the Precautionary Principle (<http://www.who.int/ifcs/documents/forums/forum5/wingspread.doc>); H. Hohmann, *Precautionary Legal Duties and Principles of Modern International Environmental Law: The Precautionary Principle: International Environmental Law between Exploitation and Protection* (Graham and Trotman, 1994) 334; P. Birnie, A. Boyle, and C. Redgwell, *International Law and the Environment* (3rd ed., Oxford University Press, 2009) 161. Steele regards reversal of the burden of proof as the strongest version of the precautionary principle as it "operates as a veto" in the sense that safety should be prioritised whatever the costs, once doubt is identified. She argues that "this kind of uncompromising approach to precaution is unlikely to succeed in attaining legitimacy or support" and it should not be adopted as a general principle rather than individual instances of precaution with specific application. J. Steele, *Risk and Legal Theory* (Hart Publishing, 2004) 194-195.

[62] Christoforou argues that the diversity in the formulation of the principle does not "affect the core and basic rational of the principle" (T. Christoforou, *The Precautionary Principle in European Community Law and Science*, in J. Tickner (ed), *Precaution, Environmental Science, and Preventative Public Policy* (Island Press, 2003) 243). See also, O. Mclntyre and T. Mosedale, *The Precautionary Principle as a Norm of Customary International Law*, 9 Journal of Environmental Law, 1997, 235.

[63] O. Mclntyre and T. Mosedale, Ibid. 236, citing H. Hey, *The Precautionary Concept in Environmental Policy and Law: Institutionalizing Caution*, 4 Georgetown International Environmental Law Review, 1992, 311. They argue that these three elements constitute customary international law.

[64] See, J. Cameron and J. Abouchar, *The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment*, 14 Boston College International and Comparative Law Review, 1991, 22-3.

[65] E.g. Article 2(2)(b) OSPAR Convention; Preamble of the Stockholm Convention on Persistent

of the Rio Declaration[66] arguably incorporates the polluter pays principle,[67] although it is not expressed in obligatory terms and is considered to 'simply lack(s) the normative character of a rule of law'.[68] The principle is included in Article 191(2) of the Treaty on the Functioning of the European Union (ex Article 174(2) EC Treaty) and thus forms part of the EU law. Preambles of some international environmental treaties refer to the principle as "a general principle of international environmental law".[69] The United Nations Environment Programme (UNEP) Draft Guidelines for the Development of National Legislation on Liability, Response Action and Compensation for Damage Caused by Activities Dangerous to the Environment states: "[t]he objective of these Guidelines is to provide an effective regime on liability, redress and compensation for damage caused by activities dangerous to the environment, taking into account, particularly, the polluter pays principle".[70] 'The Future We Want', the outcome document of the 2012 UN Conference on Sustainable Development (Rio + 20),[71] reaffirmed all the principles of the Rio Declaration, including the precautionary and polluter pays principles.[72] The essence of the polluter pays principle is that a (potential) polluter should internalise the cost of complying with environmental measures, or the

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Organic Pollutants; Prologue and Article 2 United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (1994); Baltic Sea Convention; Article 2.5(b) Helsinki Water Convention; Article 2.1 Convention on the Protection of the Alps (1991); WSSD, Johannesburg Declaration on Sustainable Development (4 September 2002) (A/CONF.199/20) (paras. 15(b), 19(b)). It should be noted that the principle was endorsed as early as 1972 by the OECD (the 1972 Recommendation of the Council on Guiding Principles concerning International Economic Aspects of Environmental Policies, available at: http://www.oecd.org).

[66] "National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment".

[67] Cf. Smets argues that Principle 16 does not refer to the polluter pays principle but to a broader principle of internalisation of environmental costs because the latter refers to a set of costs broader than the "costs of pollution prevention, control and reduction measures." H. Smets, *The Polluter Pays Principle in the Early 1990s*, in L. Campiglio, L. Pineschi, D. Siniscalco, and T. Treves (eds), The Environment after Rio: International Law and Economics (Martinus Nijhoff, 1994) 134-5.

[68] Birnie, Boyle, and Redgwell, (n. 61) 322.

[69] E.g. the International Convention on Oil Pollution Preparedness, Response and Co-operation (1990) and the Convention on the Transboundary Effects of Industrial Accidents (1992).

[70] Note by the Executive Director in the fourth programme for the Development and Periodic Review of Environmental Law at the Governing Council of the UNEP in 2008, UNEP/GC/25/INF/15/Add.3.

[71] It was endorsed by the General Assembly in its resolution 66/288. UNGA, Resolution 66/288 of 27 July 2012, *The Future We Want* (A/RES/66/288) available at: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/66/288&Lang=E.

[72] Ibid., paras. 14-18.

negative externalities that they impose on society at large.[73] The rationale underlying the principle is that "[p]rices that are paid by producers and consumers should accurately reflect the full cost of their production and/or consumption (i.e. including the environmental costs)".[74] This indicates that environmental costs should be considered as costs associated with the ownership of the property.

3.2. Partial compensation in light of the polluter pays and precautionary principles

As noted above, the essence of the polluter pays principle is the internalisation of the cost of complying with environmental measures. In this regard, it should be noted that under the influence of the precautionary principle, the meaning of pollution for the polluter pays principle has evolved from harm resulting in detrimental effects[75] to a broader concept that encompasses the risk of environmental degradation in general.[76] Furthermore, the purpose of the principle, which is essentially and initially the prevention of environmental harm, as well as cleaning up the environmental damage caused,[77] may now be considered to encompass "the recognition that environmental regulations are bound to become stricter as societies and technology progress".[78] This

[73] T. W. Merrill, *Incomplete Compensation for Takings*, 11 NYU Environmental Law Journal, 2002, 133.

[74] OECD Joint Working Party on Trade and Environment, "The Polluter-Pays Principle as It Relates to International Trade", 23 December 2001, COM/ENV/TD(2001)44/FINAL, 9.

[75] The concept of pollution was originally "the introduction by man, directly or indirectly, of substances or energy into the environment resulting in deleterious effects of such a nature as to endanger human health, harm living resources, and ecosystems, and impair or interfere with amenities and other legitimate uses of the environment". OECD, *Recommendation of the Council on Principles Concerning Transfrontier Pollution* 14 November 1974, OECD Doc. C(74) 224.

[76] E.g. in the Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment (the Lugano Convention, not yet in force), the term 'damage' is defined to include "the costs of preventive measures and any loss or damage caused by preventive measures" (Article 2.7(d)). Directive 2008/1/EC of the European Parliament and of the Council of 15 January 2008 (which codified the IPPC Directive (Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control)) defines pollution as "the direct or indirect introduction, as a result of human activity, of substances, vibrations, heat or noise into the air, water or land which *may be harmful* to human health or the quality of the environment, result in damage to material property, or impair or interfere with amenities and other legitimate uses of the environment" (emphasis added). See also, N. De Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules* (Oxford University Press, 2002) 40-41.

[77] See, Opinion of Advocate General Leger in Case C-293/97, *The Queen v. Secretary of State for the Environment and Ministry of Agriculture, Fisheries and Food, ex parte H. A. Standley and Others and D.G.D. Metson and Others* [1999] ECR I-02603, paras. 93-95.

[78] M. A. Orellana, *Science, Risk and Uncertainty: Public Health Measures and Investment Disciplines*, in P. Kahn and T. Waelde (eds), *New Aspects of International Investment Law* (Martinus Nijhoff Publishers, 2007) 761. See also, N. De Sadeleer, *The Precautionary Principle in European Community Health and Environmental Law: Sword or Shield for the Nordic Countries?* in N. De

justifies extending the meaning of 'the internalisation of environmental costs' so that it also requires a potential polluter to share the burden associated with the risk of future environmental degradation, and such a burden includes the precautionary measures the host state adopts in order to avoid or reduce such risk. Lastly, the concept of strict liability included in the precautionary principle and the polluter pays principle[79] indicates that environmental costs should be borne by those responsible for such damage (rather than the community at large), even when there is no fault on the part of the polluter.[80] This being so, where bona fide environmental measures were adopted in response to environmental concerns associated with the investment project at issue, the polluter pays principle requires making downward adjustments to the compensation amount so as not to entirely shift the environmental costs and negative externalities onto the general public. For example, these principles justify the approximation of FMV by incorporating future environmental costs into the calculations when using the DCF method for measuring the income-generating potential of a business. DCF is the measure most commonly relied on in investment arbitration (such as *ADC v. Hungary*,[81] *CMS v. Argentina*,[82] *Enron v. Argentina*,[83] *Sempra v. Argentina*,[84] and *National Grid v. Argentina*[85]), where the expropriated enterprise was actually a 'going concern'.[86] The DCF method consists of the following steps. First, it values an income-producing asset by estimating the cash flow (revenue) the asset would be expected to generate, year by year, over the course of its life. Secondly, the resulting revenue is discounted by different calculation methods[87] that reflect the following factors: (a) the time value of

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Sadeleer (ed), *Implementing the Precautionary Principle: Approaches from the Nordic Countries, EU, and USA* (Earthscan, 2007) 33-34.

79 For example, the preamble of the Lugano Convention provides the following: "Having regard to the desirability of providing for strict liability in this field taking into account the 'Polluter Pays' Principle".

80 This is based on the proportion that if one of two innocent persons must suffer the consequences of an occurrence, he/she who caused it must be the one to bear the loss. De Sadeleer "Environmental Principles: From Political Slogans to Legal Rules" (n. 76) 51-52.

81 ICSID, *ADC v. Hungary*, ICSID Case No. ARB/03/16, Award of 2 October 2006, paras. 444-448.

82 ICSID, *CMS v. Argentina*, ICSID Case No. ARB/01/8, Award of 12 May 2005, paras. 416-417.

83 ICSID, *Enron v. Argentina*, ICSID Case No. ARB/01/3, Award of 22 May 2007, para. 386.

84 ICSID, *Sempra Energy International v. Argentine Republic*, ICSID Case No ARB/02/16, Award of 28 September 2007, paras. 407-415.

85 *National Grid v. Argentina* (n. 29) paras. 275-289.

86 The application of the DCF method is subject to the condition that the projected cash flows of the business must be reasonably capable of determination. This condition has been recognised by investment arbitration tribunals, e.g. *National Grid v. Argentina* (n. 29) para. 276: "[i]n order to function properly, the DCF approach requires that the concern in question must have a history of profitable operation" (citation omitted); *Rumeli Telekom A. S. and Telsim Mobil Telekomunikasyon Hizmetleri A.S. v. Kazakhstan*, ICSID Case No ARB/05/16, award of 29 July 2008, paras. 801-804.

87 Sabahi identifies the two primary ways to calculate the discount rate: (1) the weighted average cost of capital; and (2) build-up methods. Sabahi (n. 24) 120-1.

money, (b) expected inflation, and (c) the risk associated with realising the cash flow under realistic circumstances (the 'risk factor').[88] Elements that are considered in the second step include the following: the assessment of the future revenue and expenses of the enterprise; a comparative assessment of other possibly available investment opportunities; and the possibility "that the projected revenue in fact will be realized."[89] The polluter pays and precautionary principles can contribute to an appropriate balance by affecting the calculation of the discount rate of the net cash flow and by providing guidance on the determination of the risk factors.[90] While some controversy exists over whether the discount rate actually affects the amount of compensation,[91] there are cases in which discount rates did have a significant impact on the amount of compensation. In *National Grid v. Argentina*, for example, different experts presented significantly different discount rates, i.e., whereas the claimant's expert proposed a discount rate of 10.84%, the tribunal-appointed expert suggested that a more appropriate discount rate would be in a range from 11.76% to 14.18%.[92] Likewise, in *CMS v. Argentina*, the same experts presented significantly different discount rates under different scenarios, ranging from 13.45% to 41.05% (or 45.04%).[93] In the *Amco v. Indonesia* cases, the compensation awarded by the second tribunal was approximately half the amount awarded by the first tribunal "for the same wrongs, using the same DCF method of valuation", with the discount rate being one of the factors that led to this disparity.[94]

Given the possibility that discount rates can significantly affect the amount of compensation, analysis turns to a discussion of risk to determine the discount. In the practice of investment treaty arbitration, the most common risk factor taken into account in assessing the amount of compensation (although not necessarily in the context of the determination of the discount rate) is the existence of an economic crisis in the host

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[88] C. F. Dugan, D. Wallace Jr., N. D. Rubins, and B. Sabahi, *Investor-State Arbitration* (Oxford University Press, 2008) 587; A. C. Smutny, *Compensation for Expropriation in the Investment Treaty Context* (2006) 3(3) Transnational Dispute Management; Sabahi (n. 24) 118.

[89] A. C. Smutny, *Some Observations on the Principles Relating to Compensation in the Investment Treaty Context* 22(1) ICSID Rev (2007) 12.

[90] These principles are unlikely to play any role in determining expected inflation and the time value of money (P. D. Friedland and E. Wong, *Measuring Damages for the Deprivation of Income-Producing Assets: ICSID Case Studies*, 6 ICSID Rev (1991) 400, 417; Sabahi (n. 24) 566).

[91] Marboe argues that "[t]he discounft rates selected by the parties are ofte not very far apart from each other", and therefore the tribunal tends to focus more on the estimation of the cash flow projections. Marboe (n. 12) 257-8.

[92] *National Grid v. Argentina* (n. 29) para. 289.

[93] *CMS v. Argentina* (n. 82) 450.

[94] P. D. Friedland and E. Wong (n. 90) 419; K. Khamsi, *Compensation for Non-expropriatory Investment Treaty Breaches in the Argentine Gas Sector Cases: Issues and Implications*, M. Waibel et al. (eds), *The Backlash against Investment Arbitration: Perceptions and Reality* (Kluwer Law International, 2010) 172-4.

state, as exemplified by cases such as *CMS v. Argentina*[95] and *Enron v. Argentina*.[96] However, economic crisis is by no means the only risk factor. The precautionary and the polluter pays principles both lead to the proposition that the possibility of changes in environmental regulations that cause business fluctuations should be considered as one of the general risk factors in certain circumstances. According to these principles, when a party invests in a project that has a (potential) environmental impact, the investor is required to share the burden associated with the risk of future environmental degradation, and such burden includes the possibility that the host state may adopt precautionary measures against such risk.

Outside the context of the DCF method, the costs the investor would have incurred to prevent and control environmental risk if the investment project had continued to operate under the new regulation can be calculated in terms of a percentage reduction in compensation. Turk provides the following example of how the polluter pays principle may actually be used in adjusting of the amount of compensation for expropriation:

> Suppose a factory is constructed at a cost of $25 million. The factory emits air pollution that will cost the government $20 million to clean up. According to the polluter pays principle, the factory owner would have to pay for the cost of the clean-up. However, suppose that instead of requiring the factory owner to pay for the pollution it has caused, the government enacts a law prohibiting the operation of the factory. In such a case the government should compensate the investor $5 million - the difference between the cost of his investment and the harm averted.[97]

Admittedly, there is no clear-cut formula for how to measure the contribution of such factors to the reduction of compensation. Quantifying the 'environmental costs' that should be borne by the potential polluter is a complex operation that requires the consideration of multiple factors such as "the nature of the nuisance, the hazards it presents, the means available to remedy its harmful effects, and the cost of meeting an environmental quality objective, including the administrative costs directly linked to

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[95] *CMS v. Argentina* (n. 82) para. 248: "(Argentina's economic crisis) must to some extent be attributed to the business risk the Claimant took on when investing in Argentina".

[96] The tribunal made downward adjustments in the DCF valuation presented by the claimant's experts, stating that "[s]uch adjustments reflect the reality of the crisis that took place in Argentina and the specific influence it has in connection with valuation and compensation". *Enron v. Argentina* (n. 83) paras. 405-407.

[97] J. Turk, *Compensation for "Measures Tantamount to Expropriation" under NAFTA: What It Means and Why It Matters*, 1 International Law and Management Review, 2005, 71 (citation omitted).

carrying out anti-pollution measures".[98] It is these complexities and difficulties that underlie the benefits of introducing the concept of environmental accounting in the assessment of compensation in this context (see Section 5). In any event, as demonstrated in Section 2, equitable considerations, the principles of the duty to mitigate damage, or contributory negligence have been applied in the assessment of compensation by tribunals "in the exercise of its discretion",[99] and these approaches are by no means free from the issues of vagueness and lack of transparency. Further, these concepts do not take into account the nature, purpose, and effect of the regulatory measure at issue.[100] The polluter pays and precautionary principles, if effectively implemented, may well complement the limitations of these concepts.

4. Application – the S*anta Elena* case revisited

This section applies the theoretical basis for partial compensation in light of the precautionary and polluter pays principles to the facts of the *Santa Elena* case.[101] *Santa Elena* is one of the 'classic' cases in which the balance between the protection of property rights and the environment was at issue. While this case is unique in the sense that the decision was based solely on the customary international law of expropriation rather than investment treaty law,[102] the award does include a statement that directly addresses the investment-environment relationship. The tribunal consisted of three distinguished scholars, and their pronouncement on this balance has been endorsed in a number of subsequent awards, the most recent of which are the *Unglaube v. Costa Rica* cases.[103] It is, however, argued that the precautionary and polluter pays principles may

[98] De Sadeleer "Environmental Principles: From Political Slogans to Legal Rules" (n. 76) 47.
[99] Yukos awards, para. 1633. It should also be noted that equitable factors do not necessarily sit well with the established calculation methods to determine the FMV. Elihu Lauterpacht argues that where the relevant investment treaty provides the FMV standard, "there is little room for the exercise of equitable discretion" (E. Lauterpacht, *Issues of Compensation and Nationality in the Taking of Energy Investments*, Journal of Energy and Natural Resources Law 1990, 249). Moreover, Marboe argues that while "a certain uncertainty and imprecision" inherent in the calculation and valuation of compensation and damages allow for the consideration of equitable principles, "equity or estimation … cannot be used as an excuse for not conducting a calculation as precisely and understandably as possible" (Marboe (n. 12) 147-148).
[100] This may be because public interests protected by regulatory measures are not easily valued in monetary terms. Merrill (n. 73) 129.
[101] *Santa Elena v. Costa Rica* (n. 14).
[102] This case is not based on an investment treaty, but on Costa Rica's agreement to submit the dispute to ICSID arbitration as a result of political pressure from the U.S. See, British Institute of International and Comparative Law, Case Summary: *Compañía del Desarrollo de Santa Elena, S. A. v The Republic of Costa Rica* available at: http://www.biicl.org/files/3928_2000_santa_elena_v_costa_rica.pdf.
[103] ICSID, *Marion Unglaube v. Costa Rica*, Award of 16 may 2012, ICSID Case No. ARB/08/1;

well have altered the tribunal's approach in determining the amount of compensation.

The facts of this case can be summarised as follows. Having acquired the subject property in Costa Rica's Guanacaste Province in the 1970s with the intention of developing it as a tourist resort and residential community, the claimant investors proceeded to design a land development program and undertook various financial and technical analyses of the property. However, on 5 May 1978, Costa Rica issued an expropriation decree (1978 Decree) for the property, for the purpose of expanding the Santa Rosa National Park. The claimant consented to the expropriation but contested the amount of compensation offered in the Decree (which was $1,919,492).[104] While both parties agreed that this was a case of expropriation, and that the claimant was "entitled to compensation on the basis of the fair market value of the property",[105] they disagreed on the date on which the expropriation actually occurred. The tribunal therefore had to examine what constituted expropriation in order to determine the 'date of expropriation' on which the FMV of the property was to be assessed.[106] The claimant argued that the actual date of expropriation was sometime later than the date of the 1978 Decree, and the fair market value of the property "based on its highest and best use in the market place" was equivalent to its present day value.[107] The respondent countered that the "relevant date at which the fair market value of the Property is to be assessed" was the date of the 1978 Decree.[108] The tribunal adopted the latter, based on the finding that "[a]s of that date, the practical and economic use of the Property by the Claimant was irretrievably lost, notwithstanding that CDSE [the claimant] remained in possession of the Property",[109] and that "[t]here is no evidence that its value at that date was adversely affected by any prior belief or knowledge that it was about to be expropriated".[110] Therefore the date used for valuation of the property was 5 May 1978, leaving the determination of the FMV on that date as the remaining issue.

FMV is defined as "the price that a willing buyer would pay to a willing seller in circumstances in which each had good information, each desired to maximize his financial gain, and neither was under duress or threat".[111] Essentially, a subjective

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ICSID, *Reinhard Unglaube v. Costa Rica*, Award of 16 May 2012, ICSID Case No. ARB/09/20, para. 214.

104 *Santa Elena v. Costa Rica* (n. 14) paras. 15-19.

105 Ibid., para. 35.

106 Para. 74.

107 Para. 75.

108 Ibid.

109 Para. 81.

110 Para. 83.

111 *Starrett Housing v. Iran* (n. 22) 201. See also, Iran-US Claims Tribunal, *INA Corporation v. The Islamic Republic of Iran*, Award of 13 August 1985, 8 Iran-US CTR 373, 380; the ILC

concept, FMV depends, for example, on different opinions and estimates of future earning power and degree of risk.[112] These elements are reflected in various calculation techniques to determine the FMV,[113] and yet the *Santa Elena* tribunal did not discuss such valuation techniques. Neither did the tribunal take into account that the expropriated property is located in an area that contains "flora and fauna of great scientific, recreational, educational, and tourism value, as well as beaches that are especially important as spawning grounds for sea turtles".[114] In fact, the tribunal explicitly denied the relevance of this fact in the following oft-cited statement:

> While an expropriation or taking for environmental reasons may be classified as a taking for a public purpose, and thus may be legitimate, the fact that the Property was taken for this reason does not affect either the nature or the measure of the compensation to be paid for the taking. That is, the purpose of protecting the environment for which the Property was taken does not alter the legal character of the taking for which adequate compensation must be paid. The international source of the obligation to protect the environment makes no difference.[115]

This statement has been relied upon by a number of subsequent tribunals and is described by a commentator as "the most convincing response to those arguing for … the exceptionality of environmental regulations as suggested by the IISD [International Institute for Sustainable Development] and WWF [World Wildlife Fund]".[116] When considered in the context of the case, however, the normative impact of this statement is not as dramatic as may have been suggested. This is a case of lawful[117] direct

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Commentaries to the Draft Articles on State Responsibility, commentary to Article 36, para. 22.

[112] Merrill (n. 73) 128. Ripinsky and Williams however point out that the FMV also has a certain objective value, for "the marketplace balances the various subjective perspectives of value by a large number of buyers and sellers". Ripinsky and Williams (n. 17) 182-183.

[113] Sabahi identifies the following valuation techniques: (i) market capitalization; (ii) market comparison; (iii) negotiations, prior transactions, and offers to buy an asset; and (iv) discounted cash flow (Sabahi, (n. 24) 112-123). Waelde and Sabahi point out that the FMV is easily manipulated for various reasons, including the irrationality of markets, i.e. they "can move within quite short periods between extreme highs and extreme lows". Waelde and Sabahi (n. 16).

[114] The 1978 Decree, para. 2.

[115] *Santa Elena v. Costa Rica* (n. 14) para. 71 (with the following note: "For this reason, the Tribunal does not analyse the detailed evidence submitted regarding what Respondent refers to as its international legal obligation to preserve the unique ecological site that is the Santa Elena Property").

[116] J. R. Marlles, *Public Purpose, Private Losses: Regulatory Expropriation and Environmental Regulation in International Investment Law*, 16 Journal of Transnational Law and Policy, 2006-2007, 309.

[117] It should be noted that the tribunal treated this case as a case of lawful expropriation despite the fact that 'the expropriation in question had taken place 22 years before the close of the arbitration proceedings' (Sabahi (n. 24) 148-9 (footnote)).

expropriation in which the parties, according to the tribunal, agreed that the compensation "should be based on the fair market value of the property calculated by reference to its 'highest and best use'".[118] In such circumstances, it was probably natural that the tribunal held that the purpose of the expropriation to protect the environment did not affect the applicability of the customary international law of expropriation requiring adequate compensation. Rather, the central issue in this case was the application of the law, that is, how to calculate the FMV of the property as adequate compensation in terms of applying the law to the date of calculation. It is indeed unfortunate that the tribunal did not consider the environmental issues at this stage of assessment. Instead, it referred to "equitable considerations" in the determination of compensation,[119] stating that "[i]t can safely be assumed that the actual and true fair market value of the Property was not higher than the price asked by the owners and not lower than the sum offered by the Government". Accordingly, the tribunal then set the compensation amount at $4,150,000, just between the respondent's valuation ($1,900,000) and the claimant's valuation ($6,400,000). In this approach, the international source of the obligation to protect the environment indeed had no role to play, neither in determining the nature or the measure of compensation, nor in assessing the actual amount of compensation.

Although the approximation through the DCF method is not appropriate for the valuation of the development project at issue in this case, which cannot qualify as a going concern at the time of expropriation,[120] the polluter pays and precautionary principles may still provide a more solid basis for achieving a balance between investment interests and environmental interests than the selection of the middle ground between the parties' valuations based on equitable considerations. For example, these principles provide theoretical grounds for the reduction of the amount of compensation by approximating the FMV. It should be recalled that given the environmental value of the area in which the property is located, (a) even if the expropriation did not take place, the property would at some point be subject to some environmental laws and regulations applicable to the area that would restrict its use; and (b) the investor should have expected the introduction of such environmental measures.[121] Accordingly, the owner

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[118] *Santa Elena v. Costa Rica* (n. 14) para. 70.
[119] Para. 92.
[120] For the concept of a going concern in the context of the Iran-US Claims Tribunal, see A. Mouri, *The International Law of Expropriation as Reflected in the Work of the Iran-US Claims Tribunal* (Martinus Nijhoff Publishers, 1994) 421-429. See also, ICSID, *Merrill & Ring Forestry L. P. v. Canada*, UNCITRAL, ICSID Administered case, Award of 31 March 2010, para. 264; M. Kantor, *Valuation for Arbitration* (Kluwer Law International, 2008) 136.
[121] This consideration is supported by Turk as follows: "[p]erhaps a better option would be to take

of the property could incur costs in order to comply with them. As discussed above, the polluter pays and precautionary principles support the proposition that the risk of environmental degradation and the possibility that the host state may adopt precautionary measures against such risk should be borne by the owner of the property. These 'environmental' costs associated with the property may be calculated in terms of a percentage reduction in compensation.

This approach could also be applied to the more recent *Unglaube v. Costa Rica* cases. These cases have many similarities with *Santa Elena*: the properties in question were located in an environmentally important area;[122] the Costa Rican government took direct action to expropriate property in order to create a national park; and the central issue was the amount of compensation for expropriation based on the FMV standard. As in *Santa Elena*, the tribunal did not provide a detailed analysis on its calculation of the FMV. The tribunal found that the expropriation took place after 22 July 2003 when the respondent first began to take actions that effectively deprived Mrs. Unglaube of her normal rights of ownership of the property,[123] stating that:

> Had Mrs. Unglaube's property not been burdened by the effects of the various ineffectual efforts to expropriate the 75-Meter Strip, she would have remained free to deal with or dispose of her property at whatever date she wished between July 2003 and the present date – including the peak period in July 2006 when prices were rising sharply and buyers were plentiful.[124]

Curiously, this tribunal did not choose the peak market period as the basis of the calculation of the FMV. It stated that:

> [I]t is more reasonable … to assume a sale of the property on January 1, 2006 – six-months before the market peak, and at a figure which gives some consideration to the normal fears and negative contingencies which are present in the minds of sellers and buyers making important investment decisions.[125]

Accordingly, the tribunal concluded that the FMV of the property was \$3.1 million, about 30% lower than the amount offered by the claimants' expert. As mentioned, in reaching this conclusion, the tribunal did not provide explanation on how it calculated

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realistic investor expectations into account when evaluating the right to compensation" (Turk (n. 97) 75).

[122] The area was "one of the world's most important nesting sites for the highly endangered leatherback turtle" (para. 163).

[123] Para. 223.

[124] Para. 316.

[125] Para. 318.

the FMV, or indeed why it chose “six-months before the market peak” as the date on which the calculation was made. This appears to be an attempt to balance the claimants’ property rights against the right of Costa Rica to expropriate the property for public purposes.[126] This purpose would have been better achieved by approximating the FMV or awarding partial compensation, taking into account the probable costs of complying with future environmental regulations, as supported by the polluter pays and precautionary principles. Admittedly, there is uncertainty as to how to quantify future environmental costs that should be borne by the potential polluter. Nevertheless, incorporating these principles into the analysis is a better approach for achieving a balanced outcome, instead of relying on equitable considerations or the notion of reasonableness, in that they squarely address the issue at the heart of these cases, i.e., the investment-environment balance, thereby treating foreign investment and environmental interests in an integrated manner.

5. Concluding remarks: ideas for implementing the theory into practice

This paper has demonstrated that: (a) awarding partial compensation is possible and appropriate in certain cases of investment arbitration that involve environment-investment conflicts; and (b) in this context, the precautionary and polluter pays principles provide a theoretical basis for partial compensation. By way of concluding this paper, this section provides a brief examination of possible means to apply this theory into practice. An approach is to include provisions that explicitly acknowledge the possibility of approximation of the amount of compensation in investment treaties. While not limited to environmental grounds, the attempt to include the possibility of approximation of the FMV in the expropriation provisions is found in the Southern African Development Community (SADC) Model Bilateral Investment Treaty (2012). Article 6 states as follows:

> 6.1. A State Party shall not directly or indirectly nationalize or expropriate investments in its territory except: (a) in the public interest; (b) in accordance with due process of law; and (c) on payment of fair and adequate compensation within a reasonable period of time.
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> 6.2. Option 1: The assessment of fair and adequate compensation shall be based on an equitable balance between the public interest and interest of those affected, having

[126] The tribunal stated that accepting the claimant’s expert’s calculation would in effect “credit Mrs. Unglaube with perfect judgment regarding a highly changeable real estate market as well as perfect market timing” (para. 317).

regard for all relevant circumstances and taking into account the current and past use of the property, the history of its acquisition, the fair market value of the property, the purpose of the expropriation, the extent of previous profit made by the foreign investor through the investment, and the duration of the investment.

6.2. Option 2: Fair and adequate compensation shall normally be assessed in relation to the fair market value of the expropriated investment immediately before the expropriation took place ("date of expropriation") and shall not reflect any change in value occurring because the intended expropriation had become known earlier. However, where appropriate, the assessment of fair and adequate compensation shall be based on an equitable balance between the public interest and interest of those affected, having regard for all relevant circumstances and taking account of: the current and past use of the property, the history of its acquisition, the fair market value of the investment, the purpose of the expropriation, the extent of previous profit made by the foreign investor through the investment, and the duration of the investment.

Regarding 'Option 2', it is observed that:

In this option, fair market value is only one factor to be considered among others. Thus, the tribunal may consider, for example, the fact that the expropriated investment has generated extraordinary profits in the past in order to set "fair and adequate" compensation below the current market value of the property. The SADC model provides only an indicative list and the tribunals retain the discretion to consider weighting other factors such as earlier misconduct on the part of investors, costs associated with damage to the environment (funds needed for site remediation or cleaning up hazardous waste dumped on site), and the depletion of natural resources.[127]

While this approach gives the tribunals a textual basis for awarding partial compensation, it has already been demonstrated that the absence of such explicit authorisation has not deterred investment arbitration tribunals from approximating, or reducing, the amount of compensation. Also, the non-exhaustive list of the elements for consideration such as 'the current and past use of the property' and 'the purpose of the expropriation' falls short of establishing criteria that may objectively guide the exercise of the discretion of arbitral tribunals.

A more practical approach might be to incorporate certain elements of environmental management accounting (EMA) in the assessment of compensation in

[127] Suzy H. Nikièma, *Compensation for Expropriation* (2013), available at: http://www.iisd.org/pdf/2013/best_practice_compensation_expropriation_en.pdf, pp. 10-11.

this context.[128] As examined above, at the heart of the polluter pays principle lies the concept of the cost of complying with environmental measures, which – in tandem with the precautionary principle – includes the burden associated with compliance of the precautionary measures the host state adopts in order to avoid or reduce future risk of environmental degradation. Therefore, when considering the approximation or reduction of the amount of compensation in light of the precautionary and polluter pays principles, determination of these 'environmental costs' would play a central role. Here, however, it is pointed out that "most management accounting techniques significantly underestimate the cost of poor environmental behaviour".[129] This has underscored the need to develop systems of EMA[130] that express environmental information in terms of financial costs to the company.[131] EMA is distinguished from conventional accounting in that they "separately identify, measure, analyze, and interpret information about environmental aspects of company activities".[132] Although EMA has been primarily

[128] For a classification of the different accounting tools for environmental accounting, see S. Schaltegger, T. Hahn, and R. Burrit, *Environmental Management Accounting – Overview and Main Approaches* (2000) available at: http://www2.leuphana.de/umanagement/csm/content/nama/downloads/download_publikationen/06-1downloadversion.pdf.

[129] The Association of Chartered Certified Accountants, *Environmental Management Accounting* is available at: http://www.accaglobal.com/gb/en/student/exam-support-resources/professional-exams-study-resources/p5/technical-articles/environmenta-management.html. Burritt identifies the following problems with the lack of recognition of environmental impacts in conventional management accounting: 1. environmental costs are assumed not to be important; 2. certain types of environmental costs are not identified or tracked; 3. indirect environmental costs are included with general business overhead; 4. an investment appraisal excludes environmental considerations; and 5. there is little consideration for externalities and sustainability issues (Roger L. Burritt, *Challenges for Environmental Management Accounting*, in Pall M. Rikhardsson, Martin Bennett, Jan Jaap Bouma, and Stefan Schaltegger (eds) *Implementing Environmental Management Accounting: Status and Challenges* (Springer, 2005) pp. 19-44 at 27).

[130] Although there is no set definition of EMA, a paper published by the United Nations Division for Sustainable Development defines this concept as follows: "the identification, collection, estimation, analysis, internal reporting, and use of physical flow information (i.e., materials, water, and energy flows), environmental cost information, and other monetary information for both conventional and environmental decision-making within an organization" (The United Nations, *Environmental Management Accounting: Policies and Linkages* (2001) available at: http://www.un.org/esa/sustdev/publications/policiesandlinkages.pdf at 4).

[131] OECD, *Environment and the OECD Guidelines for Multinational Enterprises Corporate Tools and Approaches*, available at: http://www.oecd.org/env/34992954.pdf at 23.

[132] Roger L. Burritt, Tobias Hahn, and Stefan Schaltegger, *Towards a Comprehensive Framework for Environmental Management Accounting – Links between Business Actors and EMA Tools* (2013) available at: http://www.apira2013.org/past/apira2001/papers/Burritt110.pdf. For differences between conventional management accounting and environmental management accounting, see the United Nations, "Environmental Management Accounting: Policies and Linkages" (n. 130) at 4; Martin Bennett, Pall M. Rikhardsson, and Stefan Schaltegger, *Adopting Environmental Management Accounting: EMA as a Value-adding Activity*, in Martin Bennett, Pall M. Rikhardsson, and Stefan

discussed in the context of policy-making by private entities as well as by public authorities such as product pricing, project appraisal, and setting quantified performance targets,[133] its approach that focuses on environmental costs may well provide objective and (albeit inconclusive) science-based guidance in the assessment of compensation in cases of environment-investment conflicts.[134] The analysis of methodologies and techniques of EMA for the identification and allocation of environment-related costs[135] and how the outcome of a particular case may be framed by the combined effect of the environmental principles and the application of EMA are reserved for future research, which would have to be based on specific case analysis and would require collaboration among scholars and practitioners in different fields.

It is hoped that this paper has demonstrated the urgent need for investment arbitration tribunals to explicitly demonstrate proper balancing between competing interests in the reasoning of each decision in a clear and coherent manner, and that, in the context of environment-investment disputes, the precautionary and polluter pays principles have the potential to provide useful guidance for such balancing. The approach proposed in this paper also highlights the benefits of inter-field collaboration across academic, institutional, and other professional practices for its effective implementation.

Schaltegger (eds), *Environmental Management Accounting – Purpose and Progress* (Springer 2012).

[133] The United Nations, "Environmental Management Accounting: Policies and Linkages" (n. 130); Burritt, "Challenges for Environmental Management Accounting" (n. 129) at 25-26.

[134] For example, Schaltegger, Hahn, and Burrit propose not only past-oriented but also future-oriented approaches for EMA, which correspond with the broader notion of the polluter pays principle. Schaltegger, Hahn, and Burrit (n. 132) at 15.

[135] For analyses of different national practices in implementing EMA, including that of Japan, see e.g. Rikhardsson, Bennett, Bouma, and Schaltegger, Implementing Environmental Management Accounting (n. 132) chapters 12-17.