# Institution-Building to Assist Compliance with International Environmental Law: Perspectives

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Academic discussions on compliance sometimes remind me of a story about Mahatma Gandhi: when asked what he thought of Western civilization, Gandhi replied, "it would be a good idea". That sarcasm might well be slapped on international environmental law: it would be a good idea, too – if only it were complied with. But as long as it is not (and we all know it is not), it may remain utopian – as René-Jean Dupuy once put it – "un droit utopique, au sens élevé du terme".[1]

Now there is nothing wrong with utopia, and I won't apologize for sympathizing with elevated utopianism.[2] As lawyers, however, we also have a duty to make our utopia work; in other words, to make interna-

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[1] R.J. Dupuy, Conclusions of the 1984 Workshop of the Hague Academy of International Law, L'avenir du droit international de l'environnement: The Future of the International Law of the Environment (Dordrecht 1985), 495–514, at 503.

[2] See M. Pallemaerts, La Conférence de Rio: grandeur ou décadence du droit international de l'environnement, Revue Belge de Droit International 28 (1995), 175, at 223, referring to M. Koskenniemi, From Apology to Utopia: The Structure of International Legal Argument (Helsinki 1989). For "encouragement of utopian trends" see also L.A. Teclaff, The Impact of Environmental Concern on the Development of International Law, in: L.A. Teclaff/A.E. Utton (eds.), International Environmental Law (New York 1974), 229, at 258. For a rather more skeptical view see H.A. Latin, The Mirage of International Environmental Law (forthcoming, New York 1997).

tional law effective. Ever since the Rio Conference,[3] there has been intensive research on the effectiveness of international environmental law and of institutions to implement it.[4] One of the principal lessons learned is that non-compliance in this field, ubiquitous as it is,[5] hardly ever results from a premeditated and deliberate violation of treaty obligations. Empirically, the three primary reasons for non-compliance are (1) incertitude of treaty standards; (2) incapacity of states to meet treaty commitments; and (3) inflexibility of treaties in the face of changing circumstances.[6]

If that diagnosis is correct, the appropriate therapy to improve future compliance will not be coercive sanctions, but remedial measures to deal with the specific root causes of non-compliance. By the same token,

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[3] Chapter 39 of Agenda 21 gave high prominence to the question of "efficacy" and "effective, full and prompt implementation" of international environmental law; see the Report of the United Nations Conference on Environment and Development, UN-Doc. A/CONF.151/26/Rev.1(vol.I), paragraphs 39.2, 39.3(a), 39.3(e), 39.8 and 39.9; and the background reports prepared on this topic, UN-Doc. A/CONF.151/PC/103 (and Add.1) and UNCED Research Papers Nos.24–35, consolidated as The Effectiveness of International Environmental Agreements: A Survey of Existing Legal Instruments (P.H. Sand [ed.], Cambridge 1992), and reprinted in Series III of International Protection of the Environment: Agenda 21 (N.A. Robinson [ed.], Dobbs Ferry/NY 1992), vol.2, 743, 1061, and vol.3, 1343.

[4] See especially the reports of the project on Implementation and Effectiveness of International Environmental Commitments carried out from 1993 to 1996 by a team of social scientists at the International Institute for Applied Systems Analysis (IIASA). For an overview of related projects, see O.R. Young/K. von Moltke, The Consequences of International Environmental Regimes: Report from the Barcelona Workshop, International Environmental Affairs 6 (1994), 348–371; H.K. Jacobson/E. Brown Weiss, Strengthening Compliance with International Environmental Accords: Preliminary Observations from a Collaborative Project, Global Governance 1 (1995), 119–148; and the panel of the American Society of International Law on "Compliance with International Standards: Environmental Case Studies", Proceedings of the 89th Annual Meeting (1995), 206–224.

[5] E.g., see the report of the United States General Accounting Office, International Environment: International Agreements Are Not Well Monitored, GAO/RCED-92–43 (Washington/DC 1992); H.F. French, Making Environmental Treaties Work, Scientific American 271 No.6 (1994), 94–97; R.B. Mitchell, International Oil Pollution at Sea: Environmental Policy and Treaty Compliance (Cambridge/MA 1994) and F. Ladenburger, Durchsetzungsmechanismen im Umweltvölkerrecht: "Enforcement" gegenüber den Staaten, Diss. Tübingen 1996.

[6] A. Chayes/A.H. Chayes, On Compliance, International Organization 47 (1993), 175–205, at 188; and see J. Stone, What Price Effectiveness?, American Society of International Law: Proceedings of the 50th Annual Meeting (1956), 198, at 203: "No doubt it must remain a constant source of perplexity to distinguish departures from existing rules of international law which are merely outrageous breaches, from those which manifest inchoate legal change. But this is a perplexity with which, regrettably, we must learn to live".

if the focus of implementation strategies shifts from punitive treaty enforcement[7] to "active treaty management",[8] institutional mechanisms will need to be re-designed accordingly. Recent developments in different environmental regimes indicate that changes in this direction are indeed beginning to take hold,[9] as part of a process of international and cross-sectoral social learning. While the present analysis mainly looks at institutional innovation, these changes are likely also to affect the process and the substance of future international law-making for environmental protection.

### *I. Institutions to Ascertain Standards*

The incertitude and indeterminacy of most treaty texts is notorious[10] and frequently deliberate – consensus often being attainable only at the price of "constructive ambiguity".[11] Environmental agreements are no exception from the rule, and much of the unfinished business left over from less-than-perfect treaty drafting is well known by the time a signed treaty enters the ratification process, with signatories openly stating their divergent interpretations. For example, when submitting the 1979 Convention on Long-range Transboundary Air Pollution (LRTAP)[12] for parliamentary ratification, the German government added an explanatory note

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[7] E.g., see A.E. Boyle, Saving the World? Implementation and Enforcement of International Environmental Law Through International Institutions, Journal of Environmental Law 3 (1991), 229–245; A.W. Samman, Enforcement of International Environmental Treaties: An Analysis, Fordham Environmental Law Journal 5 (1993), 261; M.E. O'Connell, Enforcement and the Success of International Environmental Law, Indiana Journal of Global Legal Studies 3 (1995), 47–64.

[8] A.H. Chayes/A. Chayes/R.B. Mitchell, Active Compliance Management in Environmental Treaties, in: W. Lang (ed.), Sustainable Development and International Law (London 1995), 75–89; and A. Chayes/A.H. Chayes, The New Sovereignty: Compliance with International Regulatory Agreements (Cambridge/MA 1996). But see *caveat* by G.W. Downs/D.M. Roche/P.N. Barsoon, Is the Good News About Compliance Good News About Cooperation?, International Organization 50 (1996), 379–406.

[9] E.g., see the new emphasis on collective "measures to assist a Contracting Party to carry out its obligations" in article 23(b) of the 1992 Paris (OSPAR) Convention for the Protection of the Marine Environment of the North-East Atlantic, Yearbook of International Environmental Law 3 (1992), 759; see E. Hey [et al.], The 1992 Paris Convention for the Protection of the Marine Environment of the North-East Atlantic: A Criticial Analysis, International Journal of Marine and Coastal Law 8 (1993), 1–76.

[10] Chayes/Chayes, *supra*, note 6, at 188–192.

[11] See W. Lang, Diplomacy and International Environmental Law-Making: Some Observations, Yearbook of International Environmental Law 3 (1992), 108, at 115.

[12] International Legal Materials 18 (1979), 1442.

stating that the treaty did not apply to radioactive substances[13] – even though at the time of adoption of the Convention, by the UN Economic Commission for Europe, the Austrian delegation had formally declared for the record that "it went without saying that ... the Convention applied to air pollution originating from nuclear power plants".[14] Other hidden divergencies may arise subsequently, in the process of treaty translation into different national languages, and during its "domestication" and integration into different national legal systems.[15]

The traditional remedy for such conscious ambivalence – and the usual consolation of lawyers when they do come across it – is reference to the treaty's dispute settlement provisions, which are piously hoped to yield some authoritative interpretation in the event of actual conflicts between parties, or else to the possibility of advisory opinions by external authorities. While none of the formal dispute settlement clauses in environmental agreements were ever used,[16] the Conferences of the Parties to the 1992 Framework Convention on Climate Change and the Convention on Biological Diversity[17] are known to have formally requested (and accepted without objections) opinions from the UN Office of Legal Affairs to ascertain the meaning and legal implications of treaty provisions.[18]

As a rule, however, the preferrred method of ascertaining indeterminate standards under international environmental agreements have been

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[13] Bundestag, Drucksache 9/1119 of 2 December 1981, 14 (annotation to article 1, *lit.* a); see also A. Rest, Tschernobyl und die Internationale Haftung, Versicherungsrecht 37 (1986), 609, at 613.

[14] 1979 Annual Report of the Economic Commission for Europe, UN Economic and Social Council, Official Records (1979), Supplement No.12, vol.I, 21–22 (paragraph 102).

[15] See K. Hanf/A. Underdal, Domesticating International Commitments: Linking National and International Decision Making, in: A. Underdal (ed.), The International Politics of Environmental Management (London 1996, forthcoming).

[16] See the survey of 124 multilateral instruments undertaken by the UNCED Preparatory Committee, P.H. Sand (ed.), The Effectiveness of International Environmental Agreements (Cambridge 1992), 14.

[17] International Legal Materials 31 (1992), 814–887.

[18] Memorandum of 23 August 1994 to the Executive Secretary of the Framework Convention on Climate Change from the UN Under-Secretary-General for Legal Affairs, UN doc. A/AC.237/74/Annex, concerning article 11(3) of the Convention (arrangements between the Conference of the Parties and the Global Environment Facility); a related opinion was provided upon request to the secretariat of the Convention on Biological Diversity. See J. Werksman, Consolidating Governance of the Global Commons: Insights from the Global Environment Facility, Yearbook of International Environmental Law 6 (1995), at notes 101–121.

"authentic" interpretations formulated or endorsed by the Contracting Parties themselves. The Executive Body of the LRTAP Convention[19] by consensus thus adopted "common understandings" to define specific terms of the 1985 Sulphur Protocol;[20] so did the Conference of the Food and Agriculture Organization of the United Nations (FAO) with regard to the 1983 International Undertaking on Plant Genetic Resources.[21] Under the 1987 Montreal Protocol on Substances That Deplete the Ozone Layer,[22] the Conference of the Parties adopted successive "indicative" definitions of "incremental costs" under article 10 and case-by-case determinations of the term "developing country" under article 5.[23]

In another, less well-known instance of creative treaty management, the World Intellectual Property Organization (WIPO) may also be said to have "made" international environmental law under the 1883 Paris Union Convention for the Protection of Industrial Property:[24] while the Convention originally protected the registered names, emblems and acronyms of "intergovernmental organizations" only – and consequently, requests for registration by the secretariats of the Convention for the Protection of the World Cultural and Natural Heritage[25] and of the United Nations Environment Programme (UNEP) were initially declined on the grounds that they did not represent autonomous organizations[26] – the Paris Union

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[19] *Supra,* note 12.

[20] International Legal Materials 27 (1988), 707. See the interpretation of article 2, adopted at the 7th session of the Executive Body (November 1989), UN doc. ECE/EB.AIR/20, paragraph 22; a similar understanding had been adopted in 1985 for the definition of "transboundary fluxes".

[21] Resolution 8/83 of the 22nd FAO Conference, as modified in 1989 by Resolution 5/89 ("agreed interpretation"); for background see H.J. Bordwin, The Legal and Political Implications of the International Undertaking on Plant Genetic Resources, Ecology Law Quarterly 12 (1985), 1053; and P. Sands, Principles of International Environmental Law (Manchester 1995), 411.

[22] International Legal Materials 26 (1987), 1550.

[23] See T. Gehring, Dynamic International Regimes: Institutions for International Environmental Governance (Frankfurt 1994), 474. See also the "clarifications" of the terms "quarantine" and "pre-shipment" under article 2H, as adopted by decision VI/11; Yearbook of International Environmental Law 5 (1994), 934.

[24] League of Nations Treaty Series 92/17, as amended by the 1958 Lisbon Act and the 1967 Stockholm Act, United Nations Treaty Series 828/305. See the report of the 19th session of the Assembly of the Paris Union, WIPO doc. P/A/XIX/4, paragraphs 20–25 (Geneva 1992).

[25] United Nations Treaty Series 1037/151.

[26] WIPO documents AB/X/12 and AB/X/32, paragraphs 29–31 (1979); P/A/VIII/2-P/CR/X/2, and P/A/VIII/3, paragraphs 4–7 (1983); and P/A/XVIII/1, paragraphs 5–8 (1991).

Assembly at its 19th session (Geneva, September 1992) adopted new "guidelines for interpretation" of article *6ter* of the Convention, so as to extend its scope to any "permanent entities" established by intergovernmental organizations or international treaties; and accordingly agreed to register the UNEP logo[27] and the emblem of the 1971 Ramsar Convention on Wetlands of International Importance.[28]

Whereas some other international treaties (such as the Bretton Woods instruments) have expressly entrusted their governing bodies with the power of interpretation,[29] most environmental agreements are silent on this point. As shown above, that did not prevent the Conferences of the Parties from assuming such "managerial" competences as implied in their institutional attributes; and even where doubts remain as to the binding nature of Conference resolutions – as in the case of the 1973 Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)[30] – the authority of the Conference to adopt authentic interpretations of controversial treaty terms was never challenged.[31]

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[27] Known as "blue angel" in Germany, where it has been used since 1978 (by agreement between UNEP and the German Federal Environment Agency) as a commercial eco-label; see P.H. Sand, Lessons Learned in Global Environmental Governance (World Resources Institute 1990), at 26; and H. Neitzel, Umweltzeichen, in: O. Kimminich/H. von Lersner/P.C. Storm (eds.), Handwörterbuch des Umweltrechts 2 (2nd ed. Berlin 1994), 2535–2541.

[28] United Nations Treaty Series 996/245.

[29] Articles of Agreement of the International Bank for Reconstruction and Development (article IX, and By-Laws section 14), of the International Development Association (article X), the International Finance Corporation (article VIII), and the International Monetary Fund (article VIII section 5). See E.P. Hexner, Interpretation by International Organizations of their Basic Instruments, American Journal of International Law 53 (1959), 341; and A. Broches, International Legal Aspects of the Operations of the World Bank, Hague Academy Recueil des Cours 98 (1959-III), 297, at 312–315.

[30] United Nations Treaty Series 993/243; see the discussion by G. Bendomir-Kahlo, CITES – Washingtoner Artenschutzübereinkommen: Regelung und Durchführung auf internationaler Ebene und in der Europäischen Gemeinschaft (Berlin 1989), at 135–163; and generally J. Werksman, The Conferences of Parties to Environmental Treaties, in: J. Werksman (ed.), Greening International Institutions (London 1996), 55–68.

[31] E.g., see the definition of "specimens bred in captivity" by CITES Conference Resolution 2.12 (1979, as amended in 1992 and revised in 1994), and the detailed "definitions" in Annex 5 of Conference Resolution 9.24 (1994). Originally, CITES Conference resolutions "interpreting" the convention could be taken by a simple majority of Parties present and voting at the meetings. Only the new rules of procedure adopted at the 1987 Ottawa meeting introduced the same qualified majority (two-thirds) as required for amendments of the CITES appendices under article XV; see W. Wijnstekers, The Evolution of CITES: A Reference to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (4th ed. 1995), at 238, 367.

It has been pointed out that this so-called authentic interpretation is indeed a form of treaty amendment – considering that even "clarifications" of previously indeterminate treaty terms effectively reduce the range of interpretative options that were available to the Parties prior to the clarification.[32] Consensual ascertainment of treaty standards limits the sphere of potentially divergent auto-interpretation by states,[33] and thus contributes to regime stabilization.[34] But well-meaning peer interpretation may also soften "hard" treaty rules (thereby weakening their effectiveness, while ostensibly easing compliance) to accommodate offenders, albeit for the sake of stability – Sicilian style: *la legge é applicata a nemico, ma interpretata all'amico...* ["law is *applied* to the enemy, but *interpreted* to a friend"].

### *II. Institutions to Upgrade Capacity*

The wide differences between states with regard to their institutional and economic capacity to implement treaty obligations were amply documented at the 1992 United Nations Conference on Environment and Development (UNCED),[35] and reflected in Agenda 21 recommendations to close the existing gaps, both by appropriate international mechanisms and by technical cooperation at the national level.[36] In recognition of the structural North-South disparity in this regard, recent environmental agreements acknowledge not only a differentiation of duties commensurate with capacities but also an entitlement of countries in need to receive assistance for treaty compliance.[37]

Technical assistance for the implementation of treaties (by national law-making and administrative capacity-building) has a long-standing tradition in several international organizations – starting with the Inter-

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[32] W. Karl, Vertragsauslegung – Vertragsänderung, in: C. Schreuer (ed.), Autorität und Internationale Ordnung (Berlin 1979), 9, at 24 (quoting M. Virally).

[33] O. Schachter, The Nature and Process of Legal Development in International Society, in: R.St.J. MacDonald/D.M. Johnston (eds.), The Structure and Process of International Law (The Hague 1983), 745, at 782.

[34] Gehring (*supra*, note 23), at 473.

[35] See note 3, *supra*.

[36] Report of the United Nations Conference on Environment and Development (Rio de Janeiro, 3–14 June 1992), vol.I, sections 8.15 and 39.9, UN doc. A/CONF.151/26/Rev.1 (1993); see L. Gündling, Compliance Assistance in International Environmental Law: Capacity-Building Through Financial and Technology Transfer (this volume), 796.

[37] Article 4(7) of the Climate Change Convention and article 20(4) of the Biodiversity Convention, *supra*, note 16.

national Labour Organisation (ILO), which has undertaken efforts for upgrading labour standards for the working environment;[38] the World Health Organization (WHO), for working towards harmonized sanitary regulations;[39] the International Atomic Energy Agency (IAEA), for compliance with nuclear safety standards;[40] the International Maritime Organization (IMO), for compliance with global marine pollution rules;[41] the FAO Development Law Service, for natural resource laws in accordance with applicable agreements, e.g. in the field of international fisheries;[42] and the Legal Advisory Service of the Commonwealth Secretariat, for a range of topics such as legislation to implement commitments of the recipient countries under regional marine environment conventions.[43] Specialized training programmes and guidelines for national implementation have been developed for several treaties, e.g., in the context of the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal.[44] A significant

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[38] See the analysis of economic reasons for the non-observance of international labour conventions, and the survey of remedial technical aid, by E.A. Landy, The Effectiveness of International Supervision: Thirty Years of I.L.O. Experience (London 1966), 119–133. On capacity-building assistance for environment-related ILO conventions see V.A. Leary, Working Environment, in: The Effectiveness of International Environmental Agreements (*supra*, note 16), 362–391.

[39] See S. Shubber, The Role of WHO in Environmental Pollution Control, Earth Law Journal 2 (1976), 363, at 378–392.

[40] See A.O. Adede, Overview of Legal and Technical Aspects of Nuclear Accident Pollution, in: D.B. Magraw (ed.), International Law and Pollution (Philadelphia 1991), 130, at 140–142.

[41] E.g., during the period from 1987 to 1992, IMO undertook consultancy missions for maritime legislation (including implementation of marine pollution conventions) in 39 developing countries. On IMO-sponsored training in marine environment law see IMLI News: Magazine of the IMO International Maritime Law Institute (Malta).

[42] Continuing the systematic worldwide dissemination of agricultural legislation initiated in 1911 by the International Institute of Agriculture in Rome; see E.S. Abensour, The Legislative Research Branch of the Food and Agriculture Organization of the United Nations, American Bar Association Journal 51 (1965), 984; P.H. Sand, Environmental Legislation and Technical Assistance, FAO doc. RLAT 801/76/23 (1976); and periodic reports by the FAO Legal Office in the United Nations Juridical Yearbook.

[43] See H.H. Marshall, The Commonwealth Legal Advisory Service, International and Comparative Law Quarterly 21 (1972), 435; and periodic reports on assistance for environmental legislation, in the Commonwealth Law Bulletin.

[44] International Legal Materials 28 (1989), 657; see the Manual for the Implementation of the Basel Convention (UNEP/SBC/94/1), Technical Guidelines (UNEP/SBC/94/6), Revised Draft Model National Legislation (UNEP/SBC/94/2), and decision II/19 on the establishment of Regional Centres for Training and Technology Transfer, adopted in 1994 by the Conference of the Parties at its second meeting (UNEP/SBC/94/3).

portion of the "legislative assistance" currently provided to developing countries through UNEP,[45] the United Nations Development Programme (UNDP)[46] and the World Bank[47] is targeted expressly or implicitly to backstop existing environmental agreements. The same is true for similar programmes carried out by non-governmental organizations, such as the Environmental Law Service of the World Conservation Union (IUCN),[48] and the Foundation for International Environmental Law and Development (FIELD);[49] and for several ongoing international training programmes in environmental law and policy.[50]

Voluntary funding to support the implementation of global and regional environmental agreements in developing countries has been available since the 1970s under a number of technical cooperation programmes

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[45] See P.H. Sand, Environmental Law in the United Nations Environment Programme, in: R.J. Dupuy (ed.), L'avenir du droit international de l'environnement: The Future of the International Law of the Environment (Hague Academy of International Law 1985), 51, at 60–63; Legal and Institutional Arrangements for Environmental Protection and Sustainable Development in Developing Countries, UNEP Environmental Law Library No.3 (1991); and periodic reports in the UNEP Biannual Bulletin of Environmental Law (vol.3, 1996).

[46] E.g., see the 1995 UNDP Annual "Capacity 21" Report, paragraph 13.02: assistance to Burkina Faso, Mali and Niger for implementation of the 1994 United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, Yearbook of International Environmental Law 5 (1994), 685.

[47] Assistance provided to more than 60 countries in the field of environment-related law and regulations, summarized in: Making Development Sustainable: The World Bank Group and the Environment (World Bank: Fiscal 1994), at 64–67. Analysis of the recipient countries' "implementation capacity" for their international commitments is part of the routine environmental assessments carried out for all World Bank projects; see "International Agreements on Environment and Natural Resources: Relevance and Application in Environmental Assessment", World Bank Environmental Assessment Sourcebook Update No.10 (March 1996), at 3–4.

[48] E.g., see C. de Klemm, Guidelines for Legislation to Implement CITES, IUCN Environmental Policy and Law Paper No.26 (1993); and the annual reports of the IUCN Environmental Law Programme.

[49] See the FIELD Annual Review 1994–1995 (London 1995), and periodic reports in FIELD in Brief; e.g., on assistance to the Alliance of Small Island States (AOSIS) in the negotiation and implementation of the UN Framework Convention on Climate Change.

[50] By the United Nations University (UNU) in Tokyo, the United Nations Institute for Training and Research (UNITAR) in Geneva, the International Development Law Institute (IDLI) in Rome, and the International Law Institute (ILI) in Washington/DC. E.g., see R.S. Maya, Towards More Effective Capacity-Building Programmes, United Nations Climate Change Bulletin No.10 (1996), 4–5, on the GEF-financed UNITAR training programme for implementation of the UN Framework Convention on Climate Change (CC:TRAIN).

and through several UNEP-sponsored "convention trust funds".[51] A formal link between technical/economic aid and compliance with global standards was first introduced by the 1972 World Heritage Convention,[52] which offered financial support to "host countries" of selected heritage sites – classified as being of global importance and concern – in return for a commitment to their long-term protection in conformity with agreed international criteria.[53] The concept of compensating developing countries for the "incremental" costs of their participation in global environmental agreements – including the building of local administrative capacity – was spelled out by the 1990 amendments to the Montreal Protocol, which led to the establishment of its Multilateral Fund (MPMF)[54] and reaffirmed by the 1992 Rio de Janeiro Conference, its two conventions, and in 1994 by the restructured Global Environment Facility (GEF).[55] The annual volume of GEF project funding in support of the recipients' international commitments in four focal areas (climate change, biodiversity, international waters, and ozone depletion) is about $500 million.[56] While

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[51] See P.H. Sand, Trusts for the Earth: New International Financial Mechanisms for Sustainable Development, in: Lang (*supra*, note 8), 167, at 183.

[52] *Supra*, note 25.

[53] For background see S.Lyster, International Wildlife Law (Cambridge 1985), 208–238; and R.L. Meyer, Travaux préparatoires for the UNESCO World Heritage Convention, Earth Law Journal 2 (1976), 45–81. Approximately one million dollars from the World Heritage Fund are allocated annually for natural heritage sites.

[54] See the amendments and adjustments to the Protocol (*supra*, note 22) adopted by decision II/8 at the 1990 London meeting, International Legal Materials 30 (1991), 537; J.M. Patlis, The Multilateral Fund of the Montreal Protocol: A Prototype for Financial Mechanisms in Protecting the Global Environment, Cornell International Law Journal 25 (1992), 181; A. Wood, The Multilateral Fund for the Implementation of the Montreal Protocol, International Environmental Affairs 5 (1993), 335; and E.R. DeSombre/J. Kauffman, The Montreal Protocol Multilateral Fund: Partial Success Story, in: R.O. Keohane/M.A. Levy (eds.), Institutions for Environmental Aid: Pitfalls and Promise (Cambridge/MA 1996), 89. The annual volume of MPMF project funding is about $150 million, the bulk of which is disbursed through the World Bank's Ozone Projects Trust Fund.

[55] International Legal Materials 33 (1994), 1283; and Section 33.14(a) of Agenda 21 (*supra*, note 36). See H. Sjöberg, The Global Environment Facility, in: Werksman (*supra*, note 30), 148. As of July 1996, 156 countries had become GEF Participants.

[56] For details (165 projects in over 100 countries) see the GEF Quarterly Operational Report (Washington/DC, April 1996). By comparison, annual GEF allocations are about six times higher than the project funding available through the UNEP Environment Fund (current budget figures in Green Globe Yearbook 1996, 237) – though still 300 times lower than the overall funding needs identified by the Rio Conference. See generally W.E. Franz, The Scope of Global Environmental Financing: Cases in Context, in: Keohane/Levy (*supra*, note 54), 367–380.

the bulk of these funds goes into improving the recipients' performance in complying with their current treaty obligations (including national administrative implementation and data reporting),[57] some GEF projects also aim at enabling developing countries to meet the standards for entering environmental regimes in the future.[58]

Assisting other parties to comply in all these cases is not, of course, an act of charity but a rational strategy in the collective self-interest of parties expecting to reap the "global environmental benefits" of a treaty. Nor is it unique to environmental regimes: precedents exist in other fields of international relations – such as world air transport, where it has long been recognized that technical assistance to "upgrade" aviation safety and airport security in the Third World (by way of investments in technical facilities, training and administrative capacity-building) not only serves to improve the internal situation of recipient countries but is essential to ensure the functioning of a global air transport network. Technical assistance for compliance with global standards therefore is the main focus of the "Standing Group on Implementation" established by the International Civil Aviation Organization (ICAO) in 1960.[59] There are obvious analogies to global environmental security.[60]

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[57] Membership in the treaties concerned is a prerequisite for MPMF and GEF project funding in the field of ozone depletion, climate change and biodiversity; hence these funds have an incentive effect as "carrots" for worldwide participation. See J.C. Dernbach, The Global Environment Facility: Financing the Treaty Obligations of Developing Nations, Environmental Reporter 23 (1993), 10124–10132.

[58] E.g., see the project on Ship Waste Disposal in China ($30 million) and two projects on Ship-Generated Waste Management in the Caribbean ($18 million), which are aimed at upgrading local technical facilities and administrative capacities to the level required for the recipient countries to join Annex V of the 1973/78 Marpol Convention, International Legal Materials 17 (1978), 546. Summaries of project status in GEF Quarterly Operational Report (April 1996), at 72.

[59] At the 40th session of the Council, ICAO doc. 8097 (C/926), 26–27, continuing on a permanent basis the work of an earlier special panel on implementation established in 1956; see T. Buergenthal, Law-Making in the International Civil Aviation Organization (Syracuse 1969), 479–500 at 114 n.211.

[60] See P.H. Sand, International Law on the Agenda of the United Nations Conference on Environment and Development: Towards Global Environmental Security?, Nordic Journal of International Law 60 (1991), 5, at 9–18. The analogy to aviation safety was stressed at a 1991 Washington symposium jointly organized by the United States General Accounting Office and the Congressional Research Service; see the Report to Congress (Senate Committee on Foreign Relations and House Committee on Foreign Affairs), International Environment: Strengthening the Implementation of Environmental Agreements, GAO/RCED-92-188 (24 August 1992), at 11.

One institutional dilemma arising in this context is the proliferation of environmental agreements requiring such assistance – acute "treaty congestion",[61] which in the case of financial instruments may contribute to chronic "funding fatigue".[62] Even though the GEF failed to evolve towards the single super-fund for major common concerns which some of its proponents had envisioned,[63] it is already faced with competing funding demands from the constituencies of different environmental conventions – reflected in the difficult negotiations for a GEF "memorandum of understanding" with the autonomous Conferences of the Parties.[64] The problem really is not a new one, though: harmonization of multilateral environmental aid policies – and coordination with the still more important flow of bilateral technical assistance in this field – has been on the agenda of the Committee of International Development Institutions on the Environment (CIDIE) since 1980[65] and of the OECD Development Assistance Committee (DAC) since 1960.[66] What is new here is the forceful intrusion of the recipients into the process of decision-making for global capacity-building, which was once considered exclusive donor domain. The institutional response to this challenge, both in the MPMF

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[61] As diagnosed by E. Brown Weiss, International Environmental Law: Contemporary Issues and the Emergence of a New World Order, Georgetown Law Journal 81 (1993), 675, at 697–702.

[62] See Sand (*supra*, note 51), at 183.

[63] Attempts (by donor states) at merging the GEF with the Montreal Protocol's Multilateral Fund failed at the 1992 Copenhagen meeting; see I.H. Rowlands, The Fourth Meeting of the Parties to the Montreal Protocol: Report and Reflection, Environment 35:6 (1993), 25, at 28–29. Attempts (by recipient states) at designating the GEF as financial mechanism also for the 1994 Convention to Combat Desertification (*supra*, note 46) were equally unsuccessful, and funding for projects concerning desertification is included in the mandate of the restructured GEF only insofar "as they relate to the [existing] four focal areas" of the Facility (GEF Instrument, article 3, *supra*, note 55).

[64] See Werksman, *supra*, note 18, at note 123; and P.H. Sand, The Potential Impact of the Global Environment Facility of the World Bank, UNDP and UNEP, in: R. Wolfrum (ed.), Enforcing Environmental Standards: Economic Mechanisms as Viable Means? (Heidelberg 1996), 479–500 at note 89.

[65] Currently including 17 major multilateral and bilateral aid agencies and financial institutions; see A.S. Timoshenko, From Stockholm to Rio: The Institutionalization of Sustainable Development, in: Lang (*supra*, note 8), 143, at 147; and generally D. Fairman/M. Ross, Old Fads, New Lessons from Economic Development Assistance, in: Keohane/Levy (*supra*, note 54), 29–52.

[66] Including all major bilateral aid donors and the Commission of the European Communities; see the DAC Guidelines on Environment and Aid adopted in December 1991 by the OECD Ministers of Environment and of Development Cooperation, especially No.4: Guidelines for Aid Agencies on Global Environmental Problems (Paris 1992).

Executive Committee and in the GEF Council, has been a rigid North-South balance of representation and voting powers – the "semicircles syndrome" which already characterized the Rio negotiations and which probably is here to stay.[67]

### *III. Institutions to Cope with Change*

Environmental problems are moving targets, frequently involving unforeseeable changes of circumstances, sometimes under crisis conditions. To respond effectively, international environmental institutions must be flexible enough for standards to be adjusted – and hence for compliance to be redefined – over time. Environmental agreements therefore make increasing use of review mechanisms for periodic performance assessment,[68] and typically rely on accelerated adjustment procedures for "technical" rules[69] to avoid the slow and cumbersome process of diplomatic re-negotiation, re-ratification and entry into force of treaty amendments. Short of textual revisions, flexibility may also be achieved by "re-interpretation",[70] or by a variety of exemptions and escape clauses which serve not only as selective incentives or "carrots" for laggards to join[71] but subsequently to

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[67] See P.H. Sand, International Environmental Law After Rio, European Journal of International Law 4 (1993), 377, at 389. According to article 10(5) of the Montreal Protocol as amended by Conference decision II/8 at London in 1990 (*supra,* note 54) and confirmed by decision IV/17 at Copenhagen in 1992, the Executive Committee consists of seven representatives of developing countries and seven from "other" countries, with the chairmanship altering annually between both groups, and votes requiring a majority of both groups; see the terms of reference of the Committee in Annex X, Yearbook of International Environmental Law 3 (1992), 827. According to articles 16, 18 and 25(c), of the 1994 GEF Instrument (*supra,* note 55), the Council consists of 16 members from developing countries and 16 from other countries, with a chairperson alternately elected from the two groups at each semi-annual meeting, and votes requiring a "double weighted majority".

[68] D.G. Victor/J. Lanchbery/O. Greene, An Empirical Study of Review Mechanisms in Environmental Regimes, International Institute for Applied Systems Analysis, IIASA/WP-94–115 (November 1994); see also T. Marauhn, Towards a Procedural Law of Compliance Control in International Environmental Relations (this volume), 696.

[69] See P. Contini/P.H. Sand, Methods to Expedite Environment Protection: International Ecostandards, American Journal of International Law 66 (1972), 37–59; and J. Sommer Environmental Law-Making by International Organisations (this volume), 628.

[70] *Supra,* notes 20–34.

[71] See M. Olson, The Logic of Collective Action: Public Goods and the Theory of Groups (rev. ed. Cambridge/MA 1971), at 51; and P.H. Sand, International Economic Instruments for Sustainable Development: Sticks, Carrots, and Games, Indian Journal of International Law 36/2 (1996) 1–16.

ease compliance.[72] Examples are the loopholes deliberately built into the 1987 Montreal Protocol (from the Third-World bonus of article 5 to the grandfather clause of article 2/6),[73] the species reservation system of CITES,[74] or the "opt-out" hatch of the International Sanitary Regulations and other regimes.[75] In some cases, a new by-pass not initially foreseen in the treaty may subsequently be added to introduce a degree of flexibility; e.g., the quota system developed under CITES to allow for exceptions from the rigid trade ban on Appendix I species.[76] Similarly, the "non-compliance procedure" grafted onto the Montreal Protocol in 1990[77] – later emulated by two LRTAP protocols in 1991 and 1994,[78] and now

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[72] K. Kummer, Providing Incentives to Comply with Multilateral Environmental Agreements: An Alternative to Sanctions?, European Environmental Law Review 3 (1994), 256.

[73] *Supra,* note 22; see K. Vorlat, The International Ozone Regime: Concessions and Loopholes?, Fletcher Forum of World Affairs 17 (1992), 135.

[74] *Supra,* note 30, articles XV, XVI, XXIII; see G. Stewart, Enforcement Problems in the Endangered Species Convention: Reservations Regarding the Reservation Clauses, Cornell International Law Journal 14 (1981), 429. Note that the so-called "reservations" against subsequent amendments of CITES listings really are part of the Convention's "opting-out" procedure, similar to "objections" under article 5(3) of the 1946 International Convention for the Regulation of Whaling, United Nations Treaty Series 161/72; see Lyster (*supra,* note 53), at 9.

[75] See D.M. Leive, International Regulatory Regimes: Case Studies in Health, Meteorology and Food 2 (Lexington/MA 1976), 461–484.

[76] *Supra,* note 30; see D.S. Favre, International Trade in Endangered Species: A Guide to CITES (Dordrecht 1989), at 51, 95, 127; and M. Wilder, Quota Systems in International Wildlife and Fisheries Regimes, Journal of Environment and Development 4 (1995), 55.

[77] Decision II/5 and Annex III adopted on an interim basis at the second (London) meeting of the Parties (*supra,* note 54) and finalized by decision IV/5 and Annex IV at the fourth meeting (Copenhagen 1992), Yearbook of International Environmental Law 3 (1992), 819. See P. Széll, The Development of Multilateral Mechanisms for Monitoring Compliance, in: Lang (*supra,* note 8), 97, at 99; M. Koskenniemi, Breach of Treaty or Non-Compliance?, Reflections on the Enforcement of the Montreal Protocol, Yearbook of International Environmental Law 3 (1992), 123–162; and H.M. Schally, The Role and Importance of Implementation Monitoring and Non-Compliance Procedures in International Environmental Regimes, in: W. Lang (ed.), The Ozone Treaties and their Influence on the Building of International Environmental Regimes (Austrian Federal Ministry for Foreign Affairs 1996), 82–92.

[78] Adopted pursuant to the 1979 Convention (*supra,* note 12): Article 3.3 of the 1991 Geneva Protocol concerning the Control of Emissions of Volatile Organic Compounds (VOCs), International Legal Materials 31 (1992), 568; article 7 of the 1994 Oslo Protocol on Further Reduction of Sulphur Emissions, International Legal Materials 33 (1994), 1542; and the LRTAP Executive Body's decision on "structure and functions of the Implementation Committee, as well as procedures for its review of compliance", Yearbook of International Environmental Law 5 (1994), 771. See the comments by Széll (*supra,* note 77), at 103, and M. Koskenniemi, New Institutions and Procedures for Implementation Control and Reaction, in: Werksman (*supra,* note 30), 236.

contemplated for at least three further environmental regimes (climate change, hazardous wastes, and desertification)[79] – affirms the power of the Contracting Parties to make their own evaluation of what constitutes compliance, and (arguably) even to grant exemptions from the strict application of treaty rules.[80]

Common to many adjustment devices of this kind is their reliance on expert advisory bodies as a "feedback loop" to chart and justify subsequent course corrections, taking account of scientific-technological progress.[81] While pre-Stockholm and pre-Rio pipe dreams of a global environmental research and assessment institution did not materialize,[82] most major environmental regimes have since been equipped with advisory facilities of their own – either using governmentally designated ex-

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[79] On the development of a "multilateral consultative process" under article 13 of the Framework Convention on Climate Change see H.E. Ott, Elements of a Supervisory Procedure for the Climate Regime (this volume), 732. On recent proposals for a "mechanism for monitoring implementation and compliance" under article 19 of the 1989 Basel Convention (*supra,* note 44), see I. Rummel-Bulska, Implementation Control: Non-Compliance and Dispute Settlement Procedures: From Montreal to Basel, in: Lang (*supra,* note 77), 51–57. On similar proposals for "Procedures to Resolve Questions on Implementation" under article 27 of the 1994 Convention to Combat Desertification (*supra,* note 46), see the report of the 8th session of the Intergovernmental Negotiating Committee on Desertification (Geneva, February 1996), especially UN doc. A/AC.241/WG.II(8)/L.5. See also section 23(1) of the 1993 Lucerne Declaration of Environment Ministers in the UN/ECE region, calling for the development of non-compliance regimes under environmental conventions; Yearbook of International Environmental Law 4 (1993), doc.9; and generally W. Lang, Compliance Control in International Environmental Law: Institutional Necessities (this volume), 685.

[80] E.g., the "temporary relief" granted to five East European countries at the 12th meeting of the Montreal Protocol's Implementation Committee (Vienna, November 1995); see D.G. Victor, The Early Operation and Effectiveness of the Montreal Protocol's Non-Compliance Procedure, IIASA Executive Report ER-96-2 (International Institute for Applied Systems Analysis 1996), at 28–31, 40; and J. Werksman, Compliance and Transition: Russia's Non-Compliance Tests the Ozone Regime (this volume), 750.

[81] See the comparative survey by L.A. Kimball, Treaty Implementation: Scientific and Technical Advice Enters a New Stage, American Society of International Law: Studies in Transnational Legal Policy No.28 (Washington/DC 1996).

[82] See the proposals by A. Chayes, International Institutions for the Environment, in: J.L. Hargrove (ed.), Law, Institutions, and the Global Environment (Dobbs Ferry/NY & Leiden 1972), at 1–26; and by the Carnegie Commission on Science, Technology, and Government, International Environmental Research and Assessment: Proposals for Better Organization and Decision Making (New York 1992). For critical reviews of what was (and was not) accomplished, see E. Rodenburg, Eyeless in Gaia: The State of Global Monitoring (World Resources Institute 1991); and B. Gosovic, The Quest for World Environmental Cooperation: The Case of the UN Global Environment Monitoring System (London/New York 1992).

pert bodies and networks (such as EMEP for acid rain,[83] or STAP for GEF[84]), or by recourse to specialized external bodies (such as ICES for the marine environment,[85] and the UN/ECOSOC Expert Committee for the transport of dangerous goods[86]), sometimes non-governmental ones (such as the IUCN Commission on National Parks and Protected Areas,[87] and the ICSU Scientific Committee on Antarctic Research[88]). To be sure, the mandate of experts tends to be qualified as consultative only, and is usually filtered through state-controlled structures of governance; but there is no doubt that expertise can (and ought to) drive policy-making and policy change in international institutions[89]– which is why some of the more influential expert groups have drawn criticism for their lack of

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[83] See the 1984 Protocol to the 1979 LRTAP Convention (*supra*, note 12) on Long-Term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-Range Transmission of Air Pollutants in Europe (EMEP), International Legal Materials 24 (1985), 484; and H. Dovland, Monitoring European Transboundary Air Pollution, Environment 29:10 (1987), 10.

[84] The Scientific and Technical Advisory Panel (STAP), already set up during the GEF pilot phase, was reconfirmed by article 24 of the Instrument for the Establishment of the Restructured Global Environment Facility (*supra*, note 55).

[85] See the 1964 Copenhagen Convention for the International Council for the Exploration of the Sea (ICES), United Nations Treaty Series 652/237. ICES (originally established in 1902) provides scientific advice on fisheries management and marine pollution matters to several regional fisheries conventions, including the 1978 Ottawa Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, the 1980 London Convention on Future Multilateral Cooperation in the North-East Atlantic Fisheries, and the 1982 Reykjavík Convention for the Conservation of Salmon in the North Atlantic Ocean; texts in: I. Rummel-Bulska/Osafo (eds.), Selected Multilateral Treaties in the Field of the Environment 2 (Cambridge 1991), at 60, 107, 157.

[86] Established by ECOSOC Resolution 645/G(XXIII) of 26 April 1957, the Committee lays down recommended technical standards (known as the "UN orange book") for all air, sea and land regimes governing the international carriage of dangerous goods – including the UN hazard classification system which also is the basis of annex III of the 1989 Basel Convention (*supra*, note 44).

[87] For the selection of natural heritage sites under article 13(7) of the 1972 World Heritage Convention (*supra*, note 25); see also the United Nations List of National Parks and Protected Areas, periodically issued by the IUCN Commission pursuant to ECOSOC Resolution 713 (XXVII) of 22 April 1959.

[88] For scientific advice (under the auspices of the International Council of Scientific Unions) in the context of the 1959 Antarctic Treaty, pursuant to the 1972 London Convention for the Conservation of Antarctic Seals, International Legal Materials 11 (1972), 251; and articles 10–12 of the 1991 Madrid Protocol on Environmental Protection, International Legal Materials 30 (1991), 1461; see Kimball (*supra*, note 81), at 17, 223, 235.

[89] See E.B. Haas, When Knowledge is Power: Three Models of Change in International Organizations (Berkeley 1990).

transparency (in the FAO/WHO Codex Alimentarius Commission,[90] and in the technical committees of the International Organization for Standardization[91]) or for pursuing their own special interests (in the UNEP/WMO Intergovernmental Panel on Climate Change[92]). Yet, on the whole – and notwithstanding a pattern of transnational solidarity among "epistemic communities" in this field[93]– there is little or no evidence of outright technocratic tendencies in contemporary environmental regimes.

There are, however, other risks in a "flexible" approach to implementation, attractive as it may be for treaty management. First, the new "fluid model" of environmental regimes – envisaged as "a rolling process of intermediate or self-adjusting agreements that respond quickly to growing scientific understanding"[94] – inevitably leads to a certain open-endedness of commitments.[95] If treaty standards can be modified

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[90] See Leive (*supra,* note 75), at 375–541; D.A. Kay, The International Regulation of Pesticide Residues in Food, American Society of International Law: Studies in Transnational Legal Policy No.13 (1976); E. Christensen, Pesticide Regulation and International Trade, Environment 32:9 (1990), 2; and L. Rosman, Public Participation in International Pesticide Regulation: When the Codex Commission Decides, Who Will Listen?, Virginia Environmental Law Journal 12 (1993), 329–365.

[91] On environment-related work of ISO technical committees see R.D. Hunter, Standardization and the Environment, International Environment Reporter 16 (1993), 185; and P.H. Sand, To Treaty or Not To Treaty?, A Survey of Practical Experience, American Society of International Law: Proceedings of the 87th Annual Meeting (1993), 378, at 380; and N. Roht-Arriaza, Shifting the Point of Regulation: The International Organization for Standardization and Global Law-Making on Trade and the Environment, Ecology Law Quarterly 22 (1995), 479–539.

[92] See S.Boehmer-Christiansen, Scientific Uncertainty and Power Politics: The Framework Convention on Climate Change and the Role of Scientific Advice, in: B.I. Spector [et al.] (eds.), Negotiating International Regimes: Lessons Learned from the United Nations Conference on Environment and Development (UNCED) (London 1994), 181–198; id., Global Climate Protection Policy: The Limits of Scientific Advice, Global Environmental Change 4 (1994), 140 and 185, at 190–200.

[93] See J.G. Ruggie, International Responses to Technology: Concepts and Trends, International Organization 29 (1975), 557, at 570; P.M. Haas, Do Regimes Matter?, Epistemic Communities and Mediterranean Pollution Control, International Organization 43 (1989), 377; and id., Epistemic Communities and the Dynamics of International Environmental Cooperation, in: V. Rittberger [et al.] (eds.), Regime Theory and International Relations (Oxford 1993).

[94] J.T. Mathews, Redefining Security, Foreign Affairs 68 (1989), 162, at 176.

[95] Sand (*supra,* note 27), at 36.

without formal amendment, governments cannot be sure of the treaty obligations they assume at the moment of signature and ratification – what is effective compliance today may be either irrelevant or non-compliance tomorrow. Secondly, liberal use of devices to facilitate compliance (such as exemptions and escape clauses) tends to undermine the credibility – and even jeopardize the legitimacy – of a treaty regime, as illustrated by the history of catch quotas and "scientific permits" under the International Whaling Convention[96] and of ivory trade quotas under CITES.[97] Possibly the most effective insurance against this risk is transparency of decision-making, to avoid any suspicion that flexible alternatives to treaty enforcement might benefit the special interests of free-riders. One obvious way to institutionalize such transparency – and to prevent environmental regimes from becoming "a threat to the democratic process"[98]– is to provide for appropriate public access and accountability. It is no coincidence that the recent institutional reforms for this purpose which are now spreading to most multilateral development agencies – the new procedures for information disclosure,[99]

[96] *Supra,* note 74; see P.W. Birnie, The International Regulation of Whaling (Dobbs Ferry/NY 1985); id., International Legal Issues in the Management and Protection of the Whale: A Review of Four Decades of Experience, Natural Resources Journal 29 (1990), 903; D.D. Caron, Governance and Collective Legitimation in the New World Order, Hague Yearbook of International Law 6 (1993), 29, at 37–44; and G. Rose/G. Paleokrassis, Compliance with International Environmental Obligations: A Case Study of the International Whaling Commission, in: J. Cameron [et al.] (eds.), Improving Compliance with International Environmental Agreements (London 1996), 148–175.

[97] *Supra,* note 30; see Wilder (*supra,* note 76), at 62–68; M.J. Glennon, Has International Law Failed the Elephant?, American Journal of International Law 84 (1990), 1; E.B. Barbier [et al.] (eds.), Elephants, Economics and Ivory (London 1990); and J. Boddens Hosang, Trade with Endangered Species, Green Globe Yearbook 1 (1992), 59–69.

[98] Heeding a warning by K. Kaiser, Transnational Relations as a Threat to the Democratic Process, International Organization 25 (1971), 706; see K. Raustiala, Democracy, Sovereignty, and the Slow Pace of International Negotiation, International Environmental Affairs 8 (1996), 3–15.

[99] E.g., see the 1993 World Bank Procedures BP 17.50 on Disclosure of Operational Information, Yearbook of International Environmental Law 4 (1993), 872; and the Global Environment Facility's collection of Implementing Agencies Policies on Information Disclosure and Consultations, GEF/C.3/Inf.7 (Washington/DC 1995), reproducing the texts of policy statements by UNDP, UNEP and the World Bank on public information and participation in GEF operations.

NGO participation,[100] and the establishment of "inspection panels" for compliance control[101] – were all spearheaded by the environmental movement.

### *Conclusions*

So far, I have presented these trends in institutional terms, in keeping with my assignment to address perspectives in institution-building, and in deference to the rampant "new institutionalism" of contemporary regime theory.[102] In all likelihood, however, the "managerial model" of compliance[103] now evolving in environmental regimes will also have repercussions well beyond the institutional machinery of these regimes. It is worth recalling that substantive legal norms continue to be an essential structural element of regime definitions[104] – even though "regime theorists

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[100] E.g., see I.F.I. Shihata, The World Bank and Non-Governmental Organizations, Cornell International Law Journal 25 (1992), 623–641; D. Wirth, Reexamining Decision-Making Processes in International Environmental Law, Iowa Law Review 79 (1994), 769; S. Charnovitz, Participation of Nongovernmental Organizations in the World Trade Organization, University of Pennsylvania Journal of International Economic Law 17 (1996), 331–357; K. Conca, Greening the UN: Environmental Organizations and the UN System, in: T.G. Weiss/L. Gordenker (eds.), NGOs, the UN and Global Governance (Boulder/CO 1996), 103–119; and H. French, The Role of Non-State Actors, in: Werksman (*supra*, note 30), 251–258.

[101] See IBRD Resolution 93–10 of 22 September 1993 on the World Bank Inspection Panel, International Legal Materials 34 (1995), 503; I.F.I. Shihata, The World Bank Inspection Panel (Oxford 1994); D.D. Bradlow/S.Schlemmer-Schulte, The World Bank's New Inspection Panel: A Constructive Step in the Transformation of the International Legal Order, ZaöRV 54 (1994), 392; and D.D. Bradlow, International Organizations and Private Complaints: The Case of the World Bank Inspection Panel, Virginia Journal of International Law 34 (1994), 553. On the subsequent establishment of similar mechanisms in the Inter-American Development Bank and the African Development Bank, see D. Hunter/A. McCrae, Multilateral Lending Activities, Yearbook of International Environmental Law 5 (1994), 291.

[102] O.R. Young, International Governance: Protecting the Environment in a Stateless Society (Ithaca 1994); and id., Global Governance: Drawing Insights from the Environmental Experience (Hanover/NH 1995), at 6 n.9. See also W. Lang, Regimes and Organizations in the Labyrinth of International Institutions, in: K. Ginther [et al.] (eds.), Völkerrecht zwischen normativem Anspruch und politischer Realität: Festschrift für Karl Zemanek zum 65. Geburtstag (Berlin 1994), 275–289.

[103] Chayes/Chayes, *supra*, note 8.

[104] See the "consensus definition" by S.D. Krasner, Structural Causes and Regime Consequences: Regimes as Intervening Variables, in: S.D. Krasner (ed.), International Regimes (Ithaca 1983), at 2: "International regimes are defined as principles, norms, rules, and decision-making procedures around which actor expectations converge in a given

find it hard to say the L-word"[105] – and that substantive law-making is inevitably part of the functions of a regime. It may even be argued that a certain amount of certified non-compliance is helpful, since it enables the international regime to flex its law-making muscles.[106] At any rate, the emergence of institutions for active treaty management is bound to have significant normative implications. Over and above the basic duty to comply with the terms of a treaty as signed and ratified (*pacta sunt servanda*), at least three consequential duties may thus be identified in recent environmental agreements:

(1) to accept peer-reviewed compliance assessments imposed by the institution established for implementation purposes;[107]

(2) to accept compensatory arrangements for compliance assistance to disadvantaged parties, through the institution designated for financial purposes; and

(3) to accept future regime adjustments by the institution legitimated for that purpose – virtually amounting to a new obligation for governments to take part in a pre-ordained learning process.[108]

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issue area". In a recent reformulation, they are defined as "social institutions consisting of agreed upon principles, norms, rules, procedures and programs that govern the interaction of actors in specific issue-areas"; see M.A. Levy/O.R. Young/M. Zürn, The Study of International Regimes, European Journal of International Relations 1 (1995), 267–330.

[105] Chayes/Chayes, *supra*, note 6, at 195 n.64.

[106] See the somewhat provocative suggestion by D.G. Victor, The Montreal Protocol's Non-Compliance Procedure: Lessons for Making Other International Environmental Regimes More Effective, in: Lang (*supra*, note 77), 58, at 74: "International agreements could be much more effective at influencing state behavior if they were designed to produce more non-compliance, leading to more extensive use of non-compliance procedures".

[107] The draft "Principles of International Law for Sustainable Development" prepared for the 4th session of the UN Commission on Sustainable Development include principle 19 ("monitoring of compliance with international commitments") formulated as an obligation of states to accept collective supervision of their compliance with agreed norms. This obligation takes the form of specific duties to disclose and communicate information; to tolerate verification and in some instances inspection; and generally to cooperate in multilateral monitoring procedures involving the participation of other states and, in a growing number of cases, of non-state actors. See the Report of the Expert Group Meeting on Identification of Principles of International Law for Sustainable Development (Geneva, 26–28 September 1995), UN Division for Sustainable Development: Background Paper No.3, paragraphs 155–160 (April 1996).

[108] Sand (*supra*, note 27), at 36; and E. Ploman, Global Learning: Concept and Applications, in: E. Brown Weiss (ed.), Environmental Change and International Law (Tokyo 1992), 459–478.

To end on a lighter note, let me express these consequential duties in a metaphor drawn from game theory: It is no secret that the negotiation and implementation of environmental agreements has a lot in common with gambling.[109] In "collaboration games" of this kind, fair play in the saloon can be ensured only if all players follow certain rules of the game. As a minimum, these rules should comprise: (1) instead of the fictitious "honour system" of traditional diplomacy,[110] acceptance of verifiable disclosure rules to prevent cheating; (2) instead of the fictitious "sovereign equality" of all players, acceptance of quantifiable handicap rules to compensate for differences in capacity;[111] and (3) instead of the

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[109] On the relevance of game theory models (such as prisoners' dilemma, stag hunt, Rambo) to some environmental regimes see K.G. Mäler, The Acid Rain Game, in: H. Folmer/E. van Irland (eds.), Valuation Methods and Policy Making in Environmental Economics (Amsterdam 1989), 229–236; M. Efinger/H. Breitmeier, Verifying a Convention on Greenhouse Gases: A Game-Theoretic Approach, in: J.C. di Primio/G. Stein (eds.), A Regime to Control Greenhouse Gases: Issues of Verification, Monitoring, Institutions (Forschungszentrum Jülich 1991), 59–68; S.Barrett, International Environmental Agreements as Games, in: R. Pethig (ed.), Conflicts and Cooperation in Managing Environmental Resources (Berlin 1992), 11, and the comments by H. Folmer, ibid., at 36; H. Folmer [et al.], Interconnected Games and International Environmental Problems, Environmental and Resource Economics 3 (1993), 313–335; H. Ward, Game Theory and the Politics of the Global Commons, Journal of Conflict Resolution 37 (1993), 203; O. Tahvonen/V. Kaitala/M. Pohjola, A Finnish-Soviet Acid Rain Game: Noncooperative Equilibria, Cost Efficiency, and Sulfur Agreements, Journal of Environmental Economics and Management 24 (1993), 87; J. Heister, Who Will Win the Ozone Game? On Building and Sustaining Cooperation in the Montreal Protocol on Substances That Deplete the Ozone Layer, Kiel Working Paper No.579 (Institute of World Economics 1993); Gehring (*supra*, note 23), at 34–38, 403–404; J. Heister [et al.], Economic and Legal Aspects of International Environmental Agreements: The Case of Enforcing and Stabilising an International $CO_2$ Agreement, Kiel Working Paper No.711 (Institute of World Economics 1995); and R.O. Keohane, Remarks to the 1995 ASIL panel (*supra*, note 4), at 217–218.

[110] L.A. Kimball, Forging International Agreement: Strengthening Intergovernmental Institutions for Environment and Development (Washington 1992), at 43.

[111] I realize that my saloon metaphors are getting mixed up here with golf, badminton, polo and horse-racing – but then these are "collaboration games", too.

[112] In a different context, I have referred to this kind of game-like international arrangements (which are not *a priori* beneficial or onerous to any one participant, but offer a fair chance of future benefits and hence make participation more attractive than non-participation) as "cubean" – *kybéia* being the ancient Greek word for throwing dice, which is also the root of the Talmudic term *qubbiya* for gambling; see P.H. Sand, Report of the 1994 Research Session of the Hague Academy of International Law, in: M. Bothe/P.H. Sand (eds.), Environmental Policy: From Regulation to Economic Instruments (Dordrecht 1995), 75–113, at 80.

fictitious expectation of each player to "win" the game, acceptance of a fair chance of future gains or losses.[112] Since the stakes in international environmental games are high indeed, it seems all the more worthwhile to inject some new legal order into the anarchy of the saloon.[113]

[113] International collaboration games are usually assumed to operate under conditions of anarchy, if not anomie; see O.R. Young, Anarchy and Social Choice: Reflections on the International Polity, World Politics 30 (1978), 241; A. Stein, Coordination and Collaboration: Regimes in an Anarchic World, in: S.D. Krasner (ed.), International Regimes (Ithaca 1983), 115–140; K. Oye, Explaining Cooperation Under Anarchy: Hypotheses and Strategies, World Politics 38 (1986), 1; and R. Axelrod/R.O. Keohane, Achieving Cooperation Under Anarchy, ibid., 226. See, however, the recent rediscovery of "social consensus rules" (which would qualify the anarchy assumption) by K. Binmore, Game Theory and the Social Contract: Playing Fair (Cambridge/MA 1994), at 35; and K.J. Arrow, Methodological Individualism and Social Knowledge, American Economic Review 84:2 (1994), 1, at 5 ("the rules of the game are social").