Chapter 12

The Clean Development Mechanism: Unwrapping the "Kyoto Surprise" [1]

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12.1 Introduction

Proposals that led to the adoption of the Clean Development Mechanism (CDM, Article 12) of the Kyoto Protocol [2] emerged late in the negotiating process, and consensus on the final text developed with unprecedented speed. The speed of this process, and the centrality of the CDM in brokering the final outcome of Kyoto, have led the chairman of the negotiations to refer to Article 12 as the "Kyoto Surprise." [3] Aspects of the CDM are undeniably innovative and have the potential to take the climate regime and indeed international law into uncharted territory. However, many of the CDM's core concepts can be traced directly to principles and mechanisms that have been discussed within the climate regime since the outset of the negotiations of the Framework Convention.[4]

In essence the CDM will facilitate a form of project-based joint implementation, governed by a multilaterally agreed set of rules and operating under the supervision of an intergovernment body. Annex I (industrialized) parties that

[1] Another version of this appeared in volume 7, issue 2, of the *Review of European and International Environmental Law.*

[2] The Kyoto Protocol to the United Nations Framework Convention on Climate Change (FCCC), adopted December 11, 1998. Uncorrected text at 37 ILM 22 (1998); the corrected text, and most other official documents cited in this chapter, can be found at the Web site of the secretariat to the FCCC at http://www.unfccc.de.

[3] Remarks by Ambassador Raúl Estrada y Oyuela, From Kyoto to Buenos Aires: Technology Transfer and Emissions Trading, a conference held at Columbia University, New York, 24 April 1998.

[4] UN Framework Convention on Climate Change, 31 ILM 849 (1992), entered into force March 21, 1994.

invest in projects in non–Annex I (developing) parties may use the greenhouse gas emission reductions accruing from such projects to offset a part of their commitments to limit or reduce their emissions under Article 3 of the protocol. Proponents of joint implementation see such investments as providing for win-win opportunities, whereby industrialized countries are allowed to achieve their commitments through the most cost-effective and flexible means and developing countries gain access to financial resources and clean energy technologies. However, as Article 12 took shape and gained momentum, various delegations sought to accommodate within the CDM the means for achieving a range of other objectives.

This chapter was prepared for the conference "From Kyoto to Buenos Aires: Technology Transfer and Emissions Trading," organized at Columbia University in April 1998 as a follow-up to the Conference of the Parties that led to the Kyoto Protocol. The conference, chaired by Raúl Estrada-Oyuela, explored the conceptual roots of different aspects of the CDM, including the pilot phase for activities implemented jointly, the functioning of the convention's financial mechanism, efforts to secure funding for adaptation, and the negotiations on the regime's compliance provisions. The negotiating history of Article 12 is reviewed here with reference to the specific textual proposals by both industrialized and developing countries that provided the elements of what would become the CDM. This is then followed by a close textual analysis of Article 12, which reveals significant ambiguities, and wide-ranging perceptions on how the CDM should evolve.[5]

12.2 Conceptual Roots

12.2.1 Project-Based Joint Implementation — Although the term *joint implementation* is not defined in the UN Framework Convention on Climate Change (FCCC),[6] it has been used to refer to two distinct but related concepts:

[5]The relationship with other proposals, such as the proposal for an International Bank of Environmental Settlements (IBES), is discussed in chapter 11. See "Development and Global Finance: The Case for an International Bank for Environmental Settlements (IBES)," Discussion Paper Series No. 10, United Nations Educational, Scientific and Cultural Organization (UNESCO) United Nations Development Programme, Office of Development Studies, September 1996. Also see "Development and Global Finance: The Case for an International Bank for Environmental Settlements," in *Sustainability and Global Environmental Policy: New Perspectives,* ed. A. K. Dragun and K. M. Jakobsson, Cheltenham: Edward Elgar, 1997, pp. 249–78.

[6]The two major references to the concept in the convention appear in Article 4.2(a), which anticipates that Annex I (developed) parties "may implement . . . policies and measures jointly with other Parties," and Article 4.2(d), which requires the Conference of the Parties, at its first session, to take decisions regarding "criteria for joint implementation." The text of the convention and all official documents cited in this article can be found on the secretariat's Web site at http://www.unfccc.de.

(1) project-based joint implementation, which would allow Annex I countries to obtain carbon offsets or credits toward their emissions reduction targets in exchange for investment in mitigation projects abroad in either Annex I or non–Annex I parties where the costs of such investments are lower, and (2) a system of tradable emissions allowances that, once allocated between parties or groups of parties, can be traded subject to a set of prescribed rules. Both forms of joint implementation were conceived to enable Annex I parties to achieve their commitments to reduce greenhouse gas emissions in a more cost-effective manner and to encourage transfers of financial resources and/or technology between parties. Both forms, however, have provoked concern from parties and observers, who argue that joint implementation shifts the responsibility, if not the cost, of undertaking emissions cuts from developed to developing countries and that this shift in responsibility could make it more difficult to ensure compliance with emissions reduction obligations.

Proponents of joint implementation have argued that such arrangements are legally possible with no justification additional to the text of the convention. An early launch of joint implementation was, however, constrained by the absence of mutually agreed criteria for joint implementation, which, the convention provides, were to be agreed by the First Conference of the Parties (COP1). Nonetheless, soon after the convention entered into force, potential investor countries, most notably the United States and Norway, began experimenting with projects in developing and transition countries designed to demonstrate the feasibility of generating carbon offsets. However, in the context of uncertainty about whether and under what criteria such offsets would be credited by the COP and in the absence of clearly quantified legally binding commitments, there was little incentive to do more than experiment.

Pilot Phase for Activities Implemented Jointly

As a result of these legal and political uncertainties, little had been done in time for COP1 to develop either the methodologies or the confidence among the critics of joint implementation that would be necessary to build a consensus decision on criteria for joint implementation. Instead, after intense negotiations, COP1 established a pilot phase for activities implemented jointly (AIJ).[7] The purpose of the pilot phase was to provide a more transparent and coherent basis for testing the feasibility of JI.

[7]Report of the Conference of the Parties on its First Session, FCCC/CP/1995/7/Add.1, April 1995, Decision 5/CP.1.

Constructive ambiguities built in to the pilot phase decision, including the newly coined acronym AIJ, allowed JI proponents to claim that the concept of project-based carbon offset investments had been approved in principle while skeptics could maintain that joint implementation was still on trial. The core of the AIJ decision clearly tipped the balance toward the skeptics by denying AIJ investors the possibility of obtaining credit, even retroactively, for any emissions reductions achieved through investments made during the AIJ pilot phase.

The negotiations of the AIJ decision and the operation of the pilot phase did, nonetheless, help to flush out and to elaborate a number of issues of principle and of practicality that influenced the development of Article 12 of the protocol and that will be critical to the ongoing discussions on the CDM. Perhaps most crucially, the COP1 negotiations resolved that, despite the references to JI in the convention, decisions on whether and on what basis credit for investments could be offset against commitments could not be taken unilaterally or through bilateral agreement between an investor and a host party. Such decisions could only be taken by the COP and would thus necessarily depend on the overwhelming support of the numerically dominant developing country parties.

Despite the unavailability of credit during the AIJ pilot phase, JI proponents made significant investments in demonstration projects, which at COP3 totaled 122. These were carried out among a very limited number and range of parties,[8] primarily through bilateral initiatives, such as the United States Initiative on Joint Implementation (USIJI) program, and the Norwegian/World Bank AIJ program. At the time of COP3, only the United States, Norway, and the Netherlands had developed AIJ projects with partners outside Annex I.[9]

The COP and its Subsidiary Body on Scientific and Technological Advice (SBSTA) developed a uniform reporting format for AIJ. The review of these reports by the FCCC secretariat and the SBSTA allowed a number of significant political and methodological issues to emerge that will help inform discussions on CDM development. Many supporters of AIJ, both North and South, have recognized rigorous reporting as essential to the successful use of JI as a means of achieving real net reductions in global greenhouse gas emission.

[8]The secretariat's most recent analysis of AIJ reports indicates a significant increase in the number and geographical spread of projects. With regard to geographical distribution, 29 of the 122 projects are based in Latin America (nine of which are hosted by Costa Rica), five are in Africa, and nine are in Asia. See FCCC/SB/1995/5.

[9]FCCC/SBSTA/1997/INF.3.

Thus far, resistance to rigorous reporting standards for AIJ projects has come from a number of developing countries that are concerned that mechanisms for monitoring compliance of individual AIJ projects are a first step toward extending significant emissions reduction and reporting requirements to developing countries as a group. The Group of 77 developing countries (G-77), which, in the climate process, provides the primary negotiating forum for non–Annex I countries, has historically resisted detailed reporting on greenhouse gas emissions as being too intrusive an imposition on national sovereignty. Although none has stated so openly, some developed countries might also resist rigorous reporting on AIJ, as it will necessarily increase the transaction costs involved in each project and might reveal fundamental impracticalities in the approach that render it less attractive.

Under the evolving drafts of the AIJ uniform reporting format,[10] AIJ partners must demonstrate the following for each project:

1. Environmental additionality, that is, that the AIJ project brings about real, measurable, and long-term environmental benefits related to the mitigation of climate change that would not have occurred in the absence of the project, and
2. Financial additionality, that is, that the resources from the Annex I investor are additional to the financial obligations of the Annex I party under the convention as well as to current official development assistance flows.

Demonstrating that the AIJ investment has yielded net additional environmental benefits thus requires the AIJ partners to construct a counterfactual baseline or reference case that describes what the host country would have done in the absence of the AIJ project. Furthermore, project proponents wanted to discourage the problem of leakage, whereby emissions increases within the host country but outside the scope of the project might wipe out the project's environmental benefits. Preventing or accounting for leakage might require a baseline to be constructed that would assess potential emissions on a countrywide basis. Such counterfactual determinations are inherently difficult and, especially when left to bilateral negotiation, take place in a context in which both the

[10]An initial draft of the AIJ Uniform Reporting Framework was presented to the parties in FCCC/SBSTA/1997/3. A modification of this format, contained in FCCC/SBSTA/1997/4, was adopted by COP3, in Decision 10/CP/3. A draft version of the URF is proposed in FCCC/SB/1999/5/ Add. 1, p. 13.

investor and the host share strong incentives to overstate the baseline emissions scenario in order to inflate the offset credited to the project.[11]

With regard to financial additionality, pilot phase AIJ and the uniform reporting framework were designed to ensure that developed countries did not use AIJ investments in place of the investment in developing country capacity that they are already required to make under the convention's financial mechanism.[12]

Just prior to Kyoto, the FCCC secretariat undertook an analysis of the AIJ reports received and confirmed that parties were struggling with these methodological challenges and producing inconsistent results.[13]

End of the Pilot Phase, Start of the Protocol

The AIJ negotiations revealed the depth of skepticism with which many developing countries view JI. Their resistance to JI, in the face of political pressure and the offer of financial incentives, might best be summarized as a combination of concerns that fully operational JI for credit would be used to constrain their development choices. Unequal bargaining positions in bilateral JI negotiations could allow Annex I investors to impose new conditionalities for access to financial resources and technology transfer, to promote the projects that were not in the national interest and that could divert resources from official development assistance (ODA) and GEF resources.[14,15]

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[11]For a discussion of the methodological challenges associated with AIJ and the protocol's flexibility mechanisms, see Activities Implemented Jointly: Partnerships for Climate and Development (IEA/OECD:1997); J. Heister, "Baselines and Indirect Effects in Carbon Offsets Projects: A Guide for Decision-Making," Draft 20, World Bank, January 1998.

[12]When seeking to determine whether contributions to the GEF were, as the convention requires, "new and additional," an independent panel of experts concluded that until international rules were developed, such a determination was not possible. G. Porter, R. Clémençon, W. Ofosu-Amaah, and M. Philips, "Study of GEF's Overall Performance" (GEF 1998) (hereafter GEF Study). During the pilot phase, AIJ projects are to be funded with resources additional to those provided by Annex II parties in fulfilment of their financial obligations within the framework of the financial mechanism and in addition to current official development assistance (ODA) flows. These flows are, however, notoriously difficult to monitor and compare, and it is not clear how developed country parties will be able to establish, in the context of declining overall flows of ODA, that investments in AIJ are additional to resources that would have or should have been committed to the GEF or to other sources of ODA.

[13]FCCC/SBSTA/1997/INF.3.

[14]FCCC/SBSTA/1997/MISC.5.

[15]The AIJ pilot phase continues, and, at least until the entry into force of the protocol, its fate will remain linked to the obligations and the institutions of the convention rather than the protocol. Efforts will no doubt be made to fold AIJ projects involving developing countries into the CDM. However, until these issues are resolved, in the interim period before the protocol and the CDM begin to operate, the practical experience gained through AIJ will continue to influence the development of methologies and procedures for the CDM.

12.3 The Global Environment Facility

The Global Environment Facility (GEF) has served, since the adoption of the convention, as the operating entity responsible for matching eligible projects in developing country parties with funds provided by Annex II parties under the convention's financial obligations. The GEF will be of interest to those working on the CDM as both a forerunner and a potential competitor for CDM projects. The methodologies developed by the GEF over the past five years of its operation to calculate the global environmental benefits generated by its investments might provide a basis for measuring the value of carbon offsets accruing from a CDM investment.

The GEF, which also serves as the financial mechanism for the other major Rio treaty, the Convention on Biological Diversity, represents what can be termed the UNCED approach to financing treaty implementation in developing countries.[16] Following the principle of common but differentiated responsibility, the Annex II parties (the wealthier Annex I countries) are required to provide new and additional funds to cover the agreed full incremental costs of measures undertaken by developing country parties to implement the convention. The extent to which developing countries are expected to fulfil their commitments is explicitly conditioned on the compliance of developed countries with their financial obligations.[17]

To limit the scope of their financial commitment and to help ensure the most effective use of the GEF's resources, Annex II parties encouraged the development of methodologies for calculating the incremental cost of greenhouse gas mitigation projects. In theory, under an incremental cost discipline, the GEF funds only that element of a project that results directly in the reduction of greenhouse gas emission, yielding thereby a global environmental benefit. Under this methodology a project proponent must describe a baseline scenario of the activity that would have taken place in the host developing country but for the GEF investment. The GEF then provides the funding that makes the alternative or additional climate-friendly activity possible.

Thus, both GEF projects and project-based carbon offset activities developed under the CDM will require the design and identification of projects or project activities that can be demonstrated to result in identifiable emissions reductions.

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[16]In fact GEF concepts trace directly to financial arrangements under the 1997 Montreal Protocol on Substances that Deplete the Ozone Layer, 26 ILM 1550, and its Multilateral Fund. See J. Werksman, "Consolidating Governance of the Global Commons: Insights from the Global Environment Facility," *Yearbook of International Environmental Law* 6, no. 27 (Oxford, 1995).

[17]UNFCCC, Articles 4.3, 4.7.

A recent assessment of the GEF's overall performance, commissioned from an independent review team, highlighted the challenges that the GEF continues to face in applying the incremental cost methodology. Although the GEF's approach has improved and become more flexible over time, the review team noted that the "present process of determining incremental costs has excluded the participation of recipient country officials in most cases, because of the lack of understanding of the concept and methodologies." [18] If project-based JI is to attract the support of host countries, the CDM will have to overcome similar challenges to produce a methodology that is transparent and practicable. The experience thus far with the GEF project cycle indicates that the process of identifying and designing projects that can be claimed with any confidence to generate emissions reductions that would not otherwise have occurred can be fraught with political and methodological difficulties.

Developing countries, the primary recipients of GEF funds have, since Rio, consistently expressed their disappointment in the GEF, reflected most clearly in their refusal to confirm the GEF as the permanent operating entity of the convention's financial mechanism. This disappointment stems from the perceived inadequacy of GEF funding levels, the slowness of the GEF project cycle, and the continued dominant influence of donors and the World Bank in shaping GEF policy. Although the GEF has been effectively confirmed by the protocol and the GEF Council, to play the same role in funding the protocol that it has played in funding the convention, its rocky beginnings opened an opportunity for an alternative funding mechanism and helped make the CDM possible.[19]

12.3.1 Funding Adaptation — Article 4.4 of the convention requires Annex II parties to assist those developing country parties most vulnerable to the adverse effects of climate change to meet the costs of adapting to those adverse effects. Annex II parties have, however, been concerned about the potentially unlimited cost associated with this obligation and the implication that compensating countries for the impacts of climate change concedes liability for their historical role in raising atmospheric greenhouse gas concentrations. Consequently, Annex II stiffly resisted links between Article 4.4 and the convention's financial mechanism. The GEF's focus on incremental cost financing was interpreted by donors to preclude it from funding activities other than those that generate global environmental benefits. Investments in coastal zone manage-

[18] GEF Study.

[19] Kyoto Protocol, Article 11(2)(b); "The New Delhi Statement of the First GEF Assembly," April 3, 1998, available at http://www.gefweb.com.

ment, strengthening sea defenses, or preparing for shifts in agricultural patterns have been viewed as generating domestic benefits outside the GEF's ambit.

At COP1 delegations from developing countries especially vulnerable to the adverse effects of climate change overcame the resistance of major donor countries and secured the endorsement of policies, eligibility criteria, and program priorities that ensure that funding will be provided for a first, limited category of adaptation projects (Stage I projects).[20] Since then the GEF Council has adopted an operational strategy that provides more detailed criteria for the funding of Stage I projects[21] and has approved a handful of projects.

In Stage I, developing country parties especially vulnerable to the impacts of climate change are eligible for full cost financing of adaptation activities related to preparing their national communications and national climate change programs, as required under Articles 4.1 and 12 of the convention.[22,23]

The absence of any meaningful source for adaptation funding under the convention opened a further opportunity for building support for an alternative funding mechanism. Emerging proposals from the CDM had the potential to generate income that could be earmarked for adaptation, that would be free from the GEF's incremental cost analysis, and that would not necessarily entail additional financial resources from governments.

12.3.2 Compliance — The history of the treatment of compliance issues under the climate change regime is reflected in the text of Article 13 of the convention and the subsequent and ongoing work of the Ad Hoc Group on Article 13 (AG-13). The majority of delegations did not support the inclusion of a robust mechanism for enforcing compliance with the convention's soft

[20]Decision 11/CP.1, Initial Guidance on Policies, Programme Priorities and Eligibility Criteria to the Operating Entity or Entities of the Financial Mechanism.

[21]*Operational Strategy* (Washington, D.C.: GEF), February 1996, pp. 38–39.

[22]These enabling activities are limited in nature but can include funds for training, vulnerability assessment, and planning related to adaptation. The GEF's operational guidelines for the funding of enabling activities indicate a typical cost range of up to $350,000 per country for the entirety of the enabling activities. These funds would be expected to include not only Stage I adaptation costs but also costs of preparation and initial national communication.

[23]"Operational Guidelines for Expedited Financial Support for Initial Communications from Non-Annex I Parties to the United Nations Framework Convention on Climate Change," GEF/C.7/Inf,10/Rev.1, October 3, 1997. In approving this approach to expediting national communications, the GEF Council noted that "the financing amounts for the preparation of enabling activities have been developed on the basis of an average estimate used for planning purposes. However, the actual level of support will vary from country to country and with the content of the enabling activities." Joint Summary of the Chairs, GEF Council Meeting, April 2–4, 1996, "Appendix: Council Decisions, Decision on Agenda Item 5(b)."

and ill-defined obligations.[24] Negotiations since the convention entered into force have instead focused on the consideration of the establishment of a non-confrontational and facilitative multilateral consultative process for the resolution of questions regarding implementation of the convention.

However, the course of the protocol negotiations revealed that strengthened commitments and more sophisticated means for implementing those commitments would require a correspondingly more elaborate system for identifying noncompliance and for providing a range of incentives and disincentives for encouraging compliance.

The possibility that noncompliance by Annex I parties could, through the imposition of financial penalties, provide a source of revenue for development assistance proved very attractive to non–Annex I delegations. Establishing preset penalties or financial safety valves as remedies for noncompliance with or breach of an international treaty raises complex issues with regard to the nature of international legal obligations. Traditional concepts of state responsibility envision that international practice demands reparation for a breach that "as far as possible, wipe[s] out all the consequences of the illegal act and reestablish[es] the situation which would, in all probability, have existed if that act had not been committed."[25] Such consequences are difficult to prejudge.

Nevertheless, noncompliance, financial penalties, and a link to development assistance became the conceptual filter through which JI was perceived as acceptable to the majority of G-77 countries.

12.4 Negotiating History of Article 12

12.4.1 Initial Positions on Project-Based JI — Project-based JI between Annex I and non–Annex I parties was introduced from the outset of the protocol negotiations and was incorporated in the Negotiating Text by the Chairman (NTC).[26] These proposals ranged from absolute prohibitions on JI

[24]On the evolution of compliance mechanisms under the UNFCCC, see H. Ott, "Elements of a Supervisory Procedure under the Climate Regime," *Heidelberg Journal of International Law,* 56, no. 3 (1996), and J. Butler, "Establishment of a Dispute Resolution/Non-Compliance Mechanism in the Climate Change Convention," unpublished manuscript (on file with the author).

[25]Cherzow Factory (Indemnity) case, PCIJ, Ser. A, no. 17, p. 47, as cited in I. Brownlie, *Principles of Public International Law,* 4th ed. (Oxford: Clarendon Press, 1990).

[26]The Negotiating Text by the Chairman (FCCC/AGBM/1997/3/Add.1 and Corr.1), dated April 21, 1997, prepared by the chairman, with assistance from the secretariat, is a comprehensive document reflecting all submissions made by parties to date and structured in the form of a protocol and without attribution to the parties. Prepared both to assist the negotiations and to meet the convention's procedural deadline (Articles 15.2 and 17.2) requiring that any proposals for protocols or amendments to the conven-

(Iran),[27] to proposals that would have limited JI to Annex I parties only (EU),[28] to more detailed elaboration on the conditions under which non–Annex I countries would be entitled to participate in project-based JI (United States).[29]

Although the G-77/China position emphasized that "[e]ach party included in Annex I to the convention shall meet its QELROs through domestic action,"[30] individual members of the group began to rebel against an outright prohibition on JI. Most notable of these was the proposal of Costa Rica, a country with an active AIJ program and that would later play a key role in designing the CDM.[31]

The Consolidated Negotiating Text by the Chairman (CNT) was prepared prior to the last scheduled session of the Ad Hoc Group on the Berlin Mandate (AGBM) and reflected the chairman's assumptions as to the "thrust of deliberations in the Group to date." It supported the prevailing position of the European Union and of the G-77 and would have allowed project-based JI between Annex I parties only.[32]

12.4.2 The Brazilian Clean Development Fund — The basis for a breakthrough in the negotiations of project-based JI between Annex I and non–Annex I parties arrived with the submission by the government of Brazil of the Proposed Elements of a Protocol.[33] This sweeping proposal sought to radically redefine the climate regime from the ground up.[34] Drawing inspiration from

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tion be submitted six months prior to the COP at which they are proposed for adoption. Of particular importance to the negotiations on the CDM in that with it the negotiators recognized that "whilst proposals additional to this negotiating text may be put forward, these should be clearly derived from the submissions already within it and should not introduce substantially new ideas."

[27]CNT, para. 139.

[28]Ibid., para. 140.

[29]Ibid., para. 143.

[30]Ibid., para. 121.4.

[31]Ibid., paras. 147–147.6.

[32]The Consolidated Negotiating Text by the chairman (FCCC/AGBM/1997/7), dated October 13, 1997, prepared just prior to the commencement of AGBM-8, was the first effort to produce a text that had the appearance of a protocol. Although significantly bracketed, and prefaced with the caveat that it was offered "without prejudice to" the NTC and the original proposals from parties contained in the relevant MISC DOCs, the chairman's assumptions as to the "thrust of deliberations in the Group to date" were employed to substantially narrow the options previously reflected in earlier compilations.

[33]FCCC/AGBM/1997/MISC.1/Add.3, p. 3.

[34]The inspiration for this proposal seems to have come from a number of sources. Its strong foundation in climate science and IPCC modelling ties it directly to Brazil's chief negotiator in the AGBM process, Dr. Luiz Gylvan Meira Filho, president of the Brazilian Space Agency and IPCC lead author. Dr. Meira Filho was given the responsibility for chairing the informal Contact Group on what became the CDM and is widely credited for successfully steering it through the negotiations. The economic aspects of the proposal, and especially the aspects that allow trading between Annex I parties, bear some resem-

IPCC climate models and emissions scenarios, the Brazilian protocol sought to introduce a science-based objectivity into the negotiations. The protocol's overall objective was to define a future level of effective emissions that could be tolerated from Annex I countries on the basis of the predicted impact of these emissions on global mean surface temperatures. An effective emissions ceiling for the combined emissions of Annex I countries for each of four five-year budget periods, running from 2001 to 2020, was proposed. Differentiated individual effective emissions ceilings were then to be allocated amongst Annex I parties on the basis of the relative fraction of effective emissions attributable to each Annex I party from modeled emissions projections.

For the purposes of the development of the CDM, the most important element of the Brazilian proposal was the introduction of a compulsory contribution, or a financial penalty for noncompliance, to be assessed against each Annex I party that had exceeded its effective emissions ceiling at the end of its budget period. The penalty was to be contributed to a non–Annex I clean development fund for use in funding climate change projects in developing countries. The size of the penalty was designed to correlate to $10 for every tonne of carbon equivalent that the Annex I party had exceeded its ceiling. This amount was estimated to reflect the likely cost of achieving an equivalent level of emissions reductions through the "implementation of non-regrets [*sic*] measures by non–Annex I parties." [35]

Brazil went further, proposing an objective basis for distributing the funds among non–Annex I parties. First, funding would be provided to non–Annex I parties in response to a voluntary application subject to the appropriate regulations approved by the COP. Second, the eligibility of each non–Annex I party for funding would be capped at a level on the basis of its relative responsibility for effective emissions during the preceding budget period. An appendix divided potential proceeds from a clean development fund into shares based on projected emissions from 1990 to 2010, ranging from China at 32% to Niue at .00005%.[36] Finally, up to 10% of the Brazilian clean development fund would be made available to non–Annex I parties for use in adaptation projects.

Critics of the Brazilian protocol doubted that such a radical restructuring of the regime could be managed in the months left before Kyoto and noted that

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blance to proposals for a "Green Bank" being made by Professor Graciela Chichilnisky of the Columbia University Program on Information and Resources. See Chichilnisky, "Development and Global Finance: The Case for an International Bank for Environmental Settlements," 10 UNDP Discussion Paper Series, UNDP, 1997.

[35] FCCC/AGBM/1997/MISC.1/Add.3, p. 24.

[36] Ibid., p. 54.

the logic of objective effectiveness resulted in a regime that penalized the large emitters in Annex I through higher commitments while rewarding the largest non–Annex I emitters with access to the largest share of the funds. There was, however, enough in the proposal to prove selectively attractive to a wide range of parties.

The first significant advance came with the formal endorsement by the G-77 and China of a central aspect of the Brazilian proposal. In a submission to the final session of the AGBM, the G-77 endorsed the establishment of a clean development fund as a means of enforcing compliance with Annex I commitments while generating revenues for development assistance. The Brazilian proposal was stripped to its essentials and incorporated into a position of the G-77 and China as follows:

> A Clean Development Fund shall be established by the Conference of the Parties to assist the developing country Parties to achieve sustainable development and contribute to the ultimate objective of the Convention. The Clean Development Fund will receive contributions from those Annex I Parties found to be in noncompliance with its QELROs under the Protocol.[37]

The United States embraced the flexibility the Brazilian proposal appeared to offer to Annex I countries having difficulty meeting their commitments at home. Characterizing the proposal as a trading system and a flexible financing instrument, the head of the U.S. delegation expressed the view that the proposal for a clean development fund and its endorsement by the G-77 represented a significant basis for hope in the approach to Kyoto.[38]

This broad-based support for some variation on a clean development fund (although subject to a very wide range of interpretation) was enough to convince the AGBM chairman to include the G-77 paragraph in the Revised Text Under Negotiation (RTUN) that went forward to Kyoto.[39,40]

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[37]Ibid., Add.6, p. 16.

[38]Reuters News Service, "Delegates Say Prospects Brighten for CO_2 Treaty," November 10, 1997.

[39]Revised Text Under Negotiation (RTUN) FCCC/CP/1997/2, although the G-77 formulation of the clean development fund was received on October 22, 1997, well after the convention's June 1 deadline for substantially new submissions.

[40]RTUN, p. 9, n. 4; p. 18, n. 13. Significantly, however, the RTUN continued to reflect a resistance to project-based joint implementation between Annex I and non–Annex I parties. There was no provision for the calculation or transfer of emissions reduction credits that might result from such a fund. Instead, the G-77 text and its placement in the RTUN maintained its emphasis as a means of enforcing compliance.

Thus, just prior to the third session of COP3 the context was set for an exploration of how views of such diverging emphasis could somehow coalesce in the creation of a mechanism that would perform such a variety of functions.

12.4.3 The Kyoto Crucible — Work on what would become the clean development mechanism began almost immediately as delegations arrived in Kyoto. An informal contact group, under the chairmanship of Brazil, was established by the Committee of the Whole (COW) in the first hours of the negotiations to discuss the clean development fund and other financial issues.[41] The brief history of the negotiations in Kyoto can be characterized as a struggle that merged the U.S.-backed proposals for project-based JI and G-77 proposals for a fund fed by compliance penalties.

The initial response from the European Union was to view the emerging CDM with suspicion. As promoted by the United States, the CDM ran counter to the European Union's position against project-based JI with parties without commitments. The version supported by the G-77 was perceived by the European Union as creating a new institution that would threaten the continued viability of the GEF as the main source of convention funding.[42]

G-77 emphasis on the compliance aspects of the clean development fund became difficult to maintain once the negotiations began to divide into smaller contact groups. Compliance, and any role a clean development fund might play in it, was assigned to a sub-group on institutional aspects of the Protocol. This sub-group was dominated by Annex I Parties, discussing potential consequences for themselves of failing to meet their commitments. Text was introduced that would have channelled financial penalties into a clean development fund.[43] However, it became apparent that it would not be possible to agree what specific binding consequences might flow from a determination of non-compliance, and the direct link between compliance and the fund dissolved.[44]

This sidetracking of compliance led the contact group on a clean development fund to focus on the role such a mechanism might play in facilitating project-based JI. In the course of two days of negotiation, the original G-77 proposal evolved from a single paragraph bolted on to the Article on Annex I

[41] *Earth Negotiations Bulletin* 12, no. 68 (December 2, 1997); author's notes.

[42] *Earth Negotiations Bulletin* 12, no. 71 (December 5, 1997).

[43] See FCCC/CP/1997/CRP.2, 7 December 1997, Article 18. Alternative A. The CRP (conference room paper) series of documents were issued in Kyoto by the chairman, to reflect and consolidate progress from the various working and contact groups during the negotiations.

[44] See FCCC/CP/1997/CRP.4, 9 December 1997, Article 19.

commitments[45] to a freestanding Article of ten paragraphs, substantially in the form it would be adopted in the protocol.[46]

Within 48 hours, the following basic principles and design features for the CDM were agreed:

1. The informal contact group defined a mechanism rather than establishing a fund, reflecting the CDM's primary role as a processor of transactions rather than as a depository of financial resources and assuaging, in part, concerns about the proliferation of international institutions and threats to the role of the GEF as the regime's financial mechanism.
2. It was agreed that credit for reductions resulting from CDM investments made from 2000 onward can be offset against the part of commitments of investor countries, resolving the main point of principle that had been left hanging by the AIJ pilot phase.
3. New institutional features emerged, including an executive board and a role for the meeting of the Conference of the Parties serving as the meeting of the parties (COP/MOP). This provided multilateral, intergovernment supervision in response to G-77 concerns about the lack of fairness and transparency that many felt had characterized bilateral AIJ transactions.
4. General criteria were agreed to provide a basis for certifying emissions reductions resulting from CDM projects, which reflected many of the same principles with regard to the need for country-driven projects and for environmental additionality that had been agreed in the AIJ pilot phase.
5. The task of adopting more specific procedures for auditing and verifying emissions reductions was assigned to the COP/MOP, reflecting ongoing concerns from a wide range of delegations that CDM transactions might be open to abuse.
6. A role in the operation of the CDM for operational entities and private and/or public entities outside the convention/protocol institutions was agreed, in principle. This left open the possibility for the direct involvement of international institutions and the private sector.
7. The operation of the CDM would be expected to generate funds to cover administrative expenses, thus helping to assuage concerns about the proliferation and the costs of new international institutions.

[45] See FCCC/CP/1997/CRP.2, Article 3(19).

[46] See FCCC/CP/1997/CRP.4, Article 14.

Table 12.1
Articles and Provisions

Article	Provision
12.1	Definition
12.2	Objective
12.3	The transaction
12.4	Governance
12.5	Principles for the certification of emissions reductions
Article	**Provision**
12.6	Project finance
12.7	Auditing and verification
12.8	Administrative expenses and adaptation costs
12.9	Involvement of private and/or public entities
12.10	Banking of certified emissions reductions

8. A share of the proceeds from the operation of the CDM will be used to assist especially vulnerable developing countries meet the costs of adaptation.

12.5 Article 12 and the CDM

Under Article 12 (see Table 12.1), the CDM will facilitate a form of project-based JI between Annex I and non–Annex I parties, governed by a multilaterally agreed set of rules, and operating under the supervision of the Conference of the Parties serving as the meeting of the Parties to the Protocol (COP/MOP) and an executive board. Emissions reductions accruing from project activities carried out in non–Annex I parties, once certified under agreed principles, may be used by Annex I parties to contribute to compliance with their emissions reductions obligations under Article 3 of the protocol.[47] Thus, agreement on Article 12 resolved a number of critical aspects of how the CDM will manage project-based JI between Annex I and non–Annex I parties to the protocol. However, many gaps remain to be filled, and the negotiating dynamic for the next stage of the development of the CDM remains fundamentally unchanged. This dynamic can now be characterized as pitting a market-based approach against an interventionist approach based on traditional public sector develop-

[47] Kyoto Protocol, Article 3.12.

ment assistance. Both approaches emphasize the need for a system capable of generating credible certified emissions reductions (CERs) but differ on the best means of achieving this.

A market-based approach relies on healthy competition in a transparent marketplace to provide the most efficient and effective means of encouraging hosts and investors to design credible CDM project activities. Once the intergovernmental process has set the rules on the types of project activities that will be eligible for certification, the private sector, which holds the capital and technology necessary to the CDM's success, would be entrusted with designing projects and would be entitled to hold and transfer CERs.

Interventionists are more skeptical of the private sector's ability to fulfil the CDM's stated purpose of assisting non–Annex I parties to achieve sustainable development. Such an approach emphasizes the need for the active involvement of public sector institutions, including home and host governments and international development institutions, in promoting the design of projects driven by broad-based policy concerns rather than market disciplines.

The debate is further complicated by the tension between those that want to see the CDM up and running quickly and with as low transaction costs as possible and those that remain cautious and are willing to increase costs in exchange for greater accountability. Parties at both ends of this spectrum place the CDM at risk either by undermining its credibility or by weighing it down with an overburdensome bureaucracy.

12.5.1 CDM Governance — Decisions on the operation of the CDM will ultimately be taken by its governing bodies (see Table 12.2). Article 12 entrusts the COP/MOP and an executive board with the general functions of guiding and supervising the CDM's operation. The division of labor between the two bodies is not entirely clear, and some refinements are likely to prove desirable. For example, the COP/MOP might want to delegate some of the more detailed work, such as the designation of operational entities, to the smaller, more focused body.

The Kyoto Protocol left undecided issues relating to the size, composition and modus operandi of the executive board (EB). The functions set out previously suggest that the EB will require a mixture of technical skills and political authority. The appropriate balance between these will depend, once again, on how interventionist the CDM is in the design, funding, and approval of project activities. The more actively involved it is in a project cycle, the greater its need for technical expertise.

The political composition of the EB will require consideration of balance between regions and/or between investor and host countries. Annex I countries

Table 12.2
CDM Governance

General Function	Specific Function	CDM
Governance	Provision of authority and guidance	COP/MOP
	Determination of part of commitment available for offset	COP/MOP
	Supervision	Executive board
	Elaboration of modalities and procedures for auditing and verification of project activities	COP/MOP
	Designation of operational entities to certify emissions reductions	COP/MOP
	Provision of guidance on the participation of private and/or public entities	Executive board
	Ensuring assessment of administrative and adaptation costs	COP/MOP
CER management	Certification of emissions reductions	Operational entity
	Auditing and verifying project activities	Undetermined (private/public entity?)
Project finance	Arranging funding of certified project activities	CDM (unspecified)

will no doubt argue against regional balance, as this inevitably leaves them with fewer seats than developing countries.[48] It must be kept in mind, however, that the larger the role played by the private sector in funding CDM projects, the weaker Annex I parties' claims for a disproportionate presence on the EB. If they are no longer in the position of donors, they have not bought their entitlement to a larger share of the vote.

Article 12 does not rule out the possibility that the function of the EB could be carried out by an existing institution that shares whatever design principles the parties agree to. Indeed Article 12(1) defines rather than establishes the CDM. This language is borrowed from Article 11 (Financial Mechanism) of the convention, where it was used to avoid the creation of a new institution, by allowing the GEF to operate the convention's financial mechanism. There would likely be considerable resistance from developing countries, which are underrepresented on the GEF Council, to authorizing the GEF to supervise the CDM.

[48] In UN practice, regional balance requires membership in multiples of five, representing Asia, Africa, Latin America, and the Caribbean (non–Annex I) and eastern Europe, western Europe, and Others (Annex I). Climate change institutions have traditionally added an additional seat for small island developing countries.

12.5.2 Exchanging Benefits for the Right to Use — The transaction at the core of the CDM (Article 12[3]) is described so ambiguously as to leave unanswered a fundamental question: Who finances CDM project activities and what is the relationship between such funding and the extent to which any particular Annex I party can use the resulting CER to offset its commitment? Although Article 12(3)(a) provides that non–Annex I parties are to benefit from project activities and Article 12(3)(b) allows Annex I parties to use the CERs that the project activities generate, there is no direct link between the provision of an investment and the ownership of the offset.

Guidance can be taken from Article 3.12, which provides that CERs can be acquired by one party from another party. This suggests but does not require that a project activity–related investment takes place in exchange for a CER. Indeed, while Article 12.6 leaves open the possibility that the "CDM shall assist in arranging funding of certified project activities *as necessary,*" it is not clear that the CDM will involve the transfer of funds in any traditional sense of public or private project finance.

Explicit references to the need for financial additionality were not included in Article 12. This can be explained in part by the perceptions of some negotiators that private-sector investments, which are expected to generate the bulk of CDM project activities, are by definition additional public sector ODA. Such investments could not, therefore, erode the level of publicly provided development assistance. However, at and since Kyoto at least one delegation, desperate for a means of generating CDM offsets, has proposed to run its climate-related bilateral ODA through the CDM.

Either way the identification of investment tied to particular project activity will clearly help establish the overall additionality of the resulting emissions reduction. Certification of CDM project activities will, after all, depend on proof that reductions in emissions are additional to any that would occur in the of the absence of project activity.

The gap in the transaction between Article 12(3)(a) and 12(3)(b) allows development of a number of proposals that might take the CDM in unanticipated directions. The disjunction between the beneficiary of the investment and the user of the CER raises the possibility that entities may act as intermediaries between investors and hosts to pool funds and build a portfolio of projects involving a variety of hosts. The creation of such financial instruments could introduce liquidity into the system that would allow CERs, or pools thereof, to be held or transferred. Finally, the gap invites discussion as to how CERs might be appropriately shared between an investor and a host.

In what might prove to be the most revolutionary aspect of the CDM, Article 12(9) invites the participation of private and/or public entities (i.e., non-

state actors) into both sides of an Article 12(3) transaction. Proposals by multilateral development banks and both commercial and not-for-profit companies reveal that the nonstate actors are already beginning to position themselves as CDM brokers.[49]

12.5.3 Certification, Auditing, and Verification — Drawing from the experiences and principles established in the AIJ pilot phase, Article 12 recognizes that the key to credible CERs will be the rules, procedures, and principles that will govern the certification of emissions reductions and the auditing and verification of project activities. The principles for emissions reduction certification set out in Article 12(5) will require a return to the fraught political and methodological issues of environmental additionality raised by both the AIJ pilot phase and GEF operations.

The COP/MOP's approach to project activity certification could run the range from laissez-faire to heavily interventionist. Article 12 certainly opens the possibility that a CDM project activity could involve only minimal participation of governments or intergovernment institutions. One scenario, described as ideal by an industry representative in Kyoto, described an Annex I–based parent corporation investing in energy savings in a non–Annex I subsidiary and offsetting the resulting emissions reductions to avoid domestic regulations. Certifying such activities would likely generate a high volume of CDM CERs.

However, this laissez-faire approach runs the risk of undermining the CDM's objective of achieving environmental additionality. It is not clear under these circumstances that the energy efficiency investment would not have otherwise occurred. Furthermore, the absence of any constraints on the emissions of developing countries could lead to substantial leakage of emissions. In a worst-case scenario, the same parent corporation could pay for its energy efficiency investment in one non–Annex I country by switching to cheaper but more polluting processes for a subsidiary in the same or another non–Annex I country. In these circumstances the parent would be able to enjoy an increase in emissions both at home and abroad and suffer no adverse consequences.

At the other end of the spectrum, the CDM certification requirements could seek to be as exacting as the GEF's project cycle. Before a GEF project can claim to have generated a global environmental benefit, a project designer must construct a baseline of domestic activity that would have occurred had GEF

[49] See "Global Carbon Initiative of the World Bank," at http://www.worldbank.org, and plans by the Inter-American Development Bank to establish a pilot CDM program, press release NR-119/98 at http://www.iadb.org.

funding not been provided. To avoid what the GEF describes as the moral hazard that might tempt governments to lower a domestic environmental baseline in order to become eligible for a larger GEF grant, the project baseline must reflect a minimal standard of environmental reasonableness. In other words, the level of emissions reductions credited to a project must be based not just on what would have taken place but also on what should have taken place. Applied to the previous scenario, this would require the parent corporation to demonstrate that its subsidiary was operating in an environmentally reasonable manner before taking credit for emissions reduced through an additional investment.

The GEF's closely regulated approach to project design was demanded primarily by Annex II parties anxious to be reassured that their GEF contributions were being well spent and spent on activities that would not have otherwise occurred. The CDM has the potential to reverse this incentive. If the bulk of financial resources flowing through the CDM are from the private sector, government finance departments will be less concerned with designing rigorous rules. Indeed Annex I countries as a group will have an incentive to lower barriers to project certification, as it will increase the amount of emissions reduction units available to offset their obligations.

Applying high standards for CDM project activity certification by, for example, demanding the same standard of environmental reasonableness from CDM project proponents, as is currently sought from GEF project proponents, has some appeal. Doing so does, however, increase the possibility that the flow of projects might remain limited.

Auditing and verifying a project activity to ensure that it is achieving the emissions reduction units it has promised to its investors is to be carried out by as yet undetermined entities according to modalities and procedures elaborated by the COP/MOP. It seems appropriate that this task be carried out by entities wholly independent of the governments and operational bodies that are designing and implementing the projects. It has been suggested that internationally recognized accounting or consulting firms might perform this function. During the AIJ pilot phase and through similar emissions trading experiments, both private sector and not-for-profit agencies have been developing the expertise and the public profile to put them in a position to play this role.[50]

[50]Note the activities of the multinational environmental auditing firm SGS (http://www.sgsgroup.com) and the establishment by the U.S. NGO, the Environmental Defense Fund, of a nonprofit company that will provide comprehensive reporting and tracking of emissions reductions in company-to-company emissions trades. See the Environmental Resources Trust's Web site at http://www.ert.net.

12.5.4 Limitations on the Use of the CDM — The rapid negotiation of Article 12 did not resolve the concerns of all delegations about the equity or the effectiveness of the CDM. This is most clearly indicated by the limitation in Article 12(3)(b) that CERs may only "*contribute to* compliance with a *part of*" Article 3 commitments, as determined by the COP/MOP. Efforts to restrict this part to a specific percentage in the text of the protocol were unsuccessful, and proponents of this flexibility mechanism have indicated that they interpret the provision as being a qualitative guide rather than a quantified cap. Any final decision on the size or character of the limitation will depend on an analysis of the volume of CERs that the CDM is likely to generate, given the transaction costs it might bear, and the extent to which it will have to compete with the protocol's other flexibility mechanisms.

Limitations on the types of project activities

Given the ongoing debate about the CDM, it has been suggested that the COP/MOP develops policies that seek to limit certification, under an elaboration of Article 12(5), to categories of project activities that are agreed in advance to have "real, measurable and long-term benefits." The absence of any mention of sinks in Article 12, in the context of their express inclusion in the parallel language of Article 6, will provide a basis for exploring whether land use change and forestry activities should be excluded from certification until scientific uncertainties associated with those projects are reduced.

Restrictions on participation: Compliance conditionality

As has been discussed, the creation of flexibility mechanisms also creates the possibility of suspending the right to access those mechanisms as a means of encouraging compliance with the protocol's obligations. On the basis of proposals from the United States, such compliance conditionalities were attached to Article 6 (Joint Implementation amongst Annex I Parties).[51]

As the parties begin to review the inconsistencies between the protocol's various flexibility mechanisms, it might prove appropriate to extend similar rules restricting access to the CDM to investors and hosts from parties that are in compliance with all the regime's obligations.

[51] Under Article 6.1(d), an Annex I party is prohibited from acquiring emissions reduction units unless it is in compliance with its inventory and reporting obligations under Articles 5 and 7. Furthermore, should a question arise through the protocol's in-depth review procedures with regard to a party's compliance with Article 6, it may not apply its emissions reduction units until the question is resolved.

Restrictions on timing: Ex post certification

Concerns about the risks associated with some or all of the project activities run through the CDM might be met by allowing CERs only after the project activity has been completed. For example, for an investment in the retooling of a power plant with a 20-year life span, only the actual emissions reduced during the commitment period in question could be offset against that period's assigned amount. There is some basis for this ex post approach in the text of Article 12, which refers to emissions reductions accruing from project activities (suggesting that they must have already occurred to be credited). There will, however, be pressure from investors to offset the full projected value of their investment as soon as possible, perhaps prior to them having fully matured.

12.5.5 Administrative Expenses and Adaptation Costs — A final, revolutionary aspect of the CDM is Article 12(8), which authorizes the COP/MOP to ensure that a share of the proceeds from certified project activities is used both to cover administrative expenses and to assist with adaptation costs. This was the last paragraph of Article 12 to be agreed and was slowed by concerns that it might establish a precedent for the collection by an international body of a tax on private economic activity, usually the exclusive preserve of sovereign states.[52] Similar revenue-raising proposals had been floated in the climate change negotiations before in the context of well-head taxes and bunker fuels taxes and were rejected as radical extensions of supranational authority.

As adopted Article 12(8) leaves open the possibility that expenses and costs can be recovered by national authorities. The article is unclear as to whether "proceeds" is intended to mean financial profits generated by an investment (if any) or some valuation of the CERs generated.

It is furthermore unclear what role the CDM will play in authorizing the expenditure of adaptation funding once it is collected. The parties can anticipate difficult questions as to what kind of projects should be funded in which developing countries. As adaptation funding is always likely to be scarce in the face of an incalculable demand, proposals to "stage" adaptation can be expected.

Both the administrative and the adaptation surcharge raise issues with regard to the CDM's ability to compete with the protocol's other flexibility

[52]As will be seen from a comparison of FCCC/CP/1997/CRP.4, Articles 12 and 14 of the Kyoto Protocol, the characterization of how administrative costs could be raised was one of the last parts of the package to be agreed.

mechanisms, which are not, at present, required to cover their costs or to contribute to adaptation. The rate at which CDM proceeds are tapped will need to be set with regard to the elasticity of investors' demand for CERs.

12.6 Conclusion

Since Kyoto the CDM has been the focus of intense interest and speculation among governments and the private sector and among a number of intergovernment and nongovernmental organizations that have seen within the text of Article 12 the potential to further develop or to invent roles for themselves in carrying out its multifaceted functions. Because it holds the aspirations of so many different constituencies, progress in elaborating the details of the CDM might well provide the first indications of the longer term prospects for the protocol as a whole.