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IMPROVING OR DISPROVING SUSTAINABLE DEVELOPMENT IN THE CLEAN
DEVELOPMENT MECHANISM IN THE MIDST OF A FINANCIAL CRISIS?

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1

INTRODUCTION

As the Clean Development Mechanism (CDM) has evolved it has become clear that it presents developed and developing countries with opportunities. The former can hope for a cheap way to meet their obligations under the Kyoto Protocol, whilst the latter see the CDM as a tool for promoting sustainable development and technology transfers. Despite these high hopes, there are doubts surrounding the CDM. This paper will seek to examine some of the positive and negative aspects of the mechanism during its brief time in operation, with a particular focus on sustainable development. Although generally developed countries seem to be benefiting from the CDM, which enables them to secure cheaper emission reductions, the effects on non-Annex I countries will be explored in more depth. Whether developing countries are benefiting from the CDM is a crucial point in evaluating the long term efficacy and viability of the mechanism. The paper discusses sustainability issues regarding CDM projects and whether these projects really do contribute to sustainable development by putting developing countries on a path to consume less carbon in the future. Finally, the achievements and problems of the CDM are discussed in the context of the financial crisis. Reforms that might help the CDM function more effectively are suggested, but the difficulties in pursuing these reforms bring into question the very existence of the CDM in the future.

2

BACKGROUND TO THE CLEAN DEVELOPMENT MECHANISM (CDM)

2.1 The CDM – A Brief Explanation

The CDM was established under the Kyoto Protocol.¹ It is one of the three flexibility mechanisms, along

with joint implementation² and emissions trading,³ designed to make it easier for industrialised countries to meet their emission reductions obligations.⁴ The adoption of the CDM came relatively late in the negotiating process⁵ and has been dubbed the 'Kyoto surprise'.⁶ The surprising, late inclusion of the CDM belies its now important role in the climate change framework. CDM allows Annex I countries to invest in projects in non-Annex I countries. These projects should mitigate climate change by reducing greenhouse gas emissions in the host country and also contribute to sustainable development.⁷ Industrialised countries can then acquire tradable certified emission reductions (CERs) equivalent to one tonne of CO₂ based on the project. These contribute to their compliance with their reduction commitments.⁸ If Annex I countries help to reduce emissions in a developing country they should get credit in the form of CERs.

A share of the money generated from CDM is used to cover administrative expenses, and two per cent of CDM profits are paid into an adaptation fund to assist countries most at risk from climate change.⁹ Although the market might reduce in size because of the current financial crisis, the CDM is still a major part of the climate change regime, worth \$3 billion per year and will, it is claimed, avert a total of 1.8 billion tonnes in greenhouse gas emissions by 2012.¹⁰ It is the main way in which developing countries can participate in the climate change regime. It is seen as a stepping stone towards those countries taking on binding emission reduction commitments in the future.

2 *Id.* Article 6.

3 *Id.* Article 17.

4 *Id.* Article 3.

5 J. Werksman, 'The Clean Development Mechanism: Unwrapping the 'Kyoto Surprise'', *7/2 Review of European Community and International Environmental Law* 147 (1998).

6 Remarks by Ambassador Raul Estrada y Oyuela, From Kyoto to Buenos Aires: Technology Transfer and Emissions Trading, Conference held at Columbia University, New York, 24 April 1998.

7 See Kyoto Protocol to the United Nations Framework Convention on Climate Change, Article 12(2).

8 *Id.* Article 12(3)(b).

9 *Id.* Article 12(8).

10 'Kyoto Protocol 'loophole' has cost \$6 billion', *New Scientist*, 9 February 2007, available at <http://www.newscientist.com/article/dn11155>.

1 See Kyoto Protocol to the United Nations Framework Convention on Climate Change, Kyoto, 11 December 1997, 37 *Int'l Leg. Mat.* 22 (1998), Article 12.

2.2 The Rationale of Proposing the CDM

Industrialised countries have undertaken legally binding commitments to reduce their emissions of greenhouse gases by an average of five per cent compared to 1990 levels.¹¹ That developed countries should shoulder greater responsibility in cutting greenhouse gas emissions, as opposed to developing countries, was justified as fair because of the historically high level of emissions that industrialised countries had been responsible for. This was encapsulated in the principle that states have 'common but differentiated responsibilities'.¹² Furthermore, developed countries have better access to finance, technology and resources that enable them to cut emissions. It seemed unfair to ask developing countries to agree to binding targets without similar access to resources. The CDM was initially thought of as 'a limited safety valve for overburdened industrialised countries',¹³ a mechanism allowing Annex I countries to ameliorate any hitherto insufficient reduction efforts with reductions in developing countries. The inclusion of CDM, along with other flexibility mechanisms, allowed industrialised countries to commit to more rigorous environmental targets than they might otherwise have agreed to.¹⁴ As well as giving developing countries a helping hand towards sustainable development, there was also this carrot of cheaper emission reductions for industrialised countries, which was a useful stick in persuading those developed countries to adopt more ambitious

targets. That there are advantages for Annex I and non-Annex I countries alike makes the CDM potentially an important and ingenious part of the international climate change regime.

The Kyoto Protocol and the CDM confirmed that climate change was a 'global problem', requiring international action and reductions.¹⁵ This global problem, where emissions from any country cause climate change, means it is less important where reductions take place, 'as location of abatement measures is climatically irrelevant'.¹⁶ Another big issue affecting the compliance cost of industrialised countries is where those mitigation measures occur.¹⁷ The location of emission reductions is important as it impacts on costs, which are usually higher in industrialised countries. Therefore it makes economic sense for emission reductions to occur where they are cheapest, usually in non-Annex I countries. The CDM aims to facilitate these cheap reductions.

The long term effect of reductions in developing countries, resulting in different historical pathways of development and thus further reductions is also important.¹⁸ It is imperative that emissions reductions are coupled with the need to address climate change. A differentiation should be made between these two aims, as if one is achieved, it does not axiomatically follow that the other occurs too.¹⁹ Supporting emission reductions alone and discussing little in the way of climate change mitigation is not the best way to proceed. Realistically a 'variety of

11 F. Yamin F, 'The Kyoto Protocol: Origins, Assessment and Future Challenges', 7/2 *Review of European Community and International Environmental Law* 113-127, (1998).

12 Rio Declaration on Environment and Development, in Report of the United Nations Conference on Environment and Development, Rio de Janeiro, UN Doc. A/CONF.151/26 (Vol. I), Annex I (1992), Principle 7.

13 H.J. Luhmann and W. Sterk, Climate Targets – Should they be Met at Home or Where they are Cheapest? The 'Clean Development Mechanism' as Generator of Investment from Inside the Climate Change Regime 3 (Washington, DC: Friedrich Ebert Stiftung, International Policy Analysis, 2008), available at <http://library.fes.de/pdf-files/id/ipa/05468.pdf>.

14 F. Yamin, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures* 136 (Cambridge: Cambridge University Press, 2004).

15 K.A. Baumert, 'Participation of Developing Countries in the International Climate Change Regime: Lessons for the Future', 38 *George Washington International Law Review* 365, 369 (2006).

16 See Yamin, note 14 above at 136.

17 *Id.*

18 B. Metz ed., *Climate Change 2007: Mitigation of Climate Change: Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* 700-701 (Cambridge: Cambridge University Press, 2007).

19 See, e.g., Driesen cites an example where an HFC 23 project reduces emissions cheaply, but fails to deliver many sustainable development benefits for the future. See D.M. Driesen, 'Sustainable Development and Market Liberalism's Shotgun Wedding: Emissions Trading Under the Kyoto Protocol', 83 *Indiana Law Journal* 21, 22-25 (2008).

approaches', including but not limited to reducing carbon emissions, is crucial.²⁰ In terms of the CDM pursuing climate change mitigation as well as emission reductions, this should mean promoting sustainable development and changing those pathways of development, as well as reducing greenhouse gas emissions. The decarbonisation of development pathways is crucial.²¹ At this juncture it is sufficient to say that emissions reductions alone will not solve the problem. Mitigation, adaptation²² and sustainable development are also key.

The claimed positive effects of the CDM on developing countries are an important part of the international climate change jigsaw. Whilst non-Annex I countries should 'benefit from project activities'²³ there is little elaboration in the Kyoto Protocol on this. Two supposed benefits are considered below. Firstly, a reduction in emissions, if additional,²⁴ should benefit the local and global environment. Secondly, if non-Annex I countries will truly benefit from project activities, CDM projects should contribute to sustainable development. There are concerns that some projects do little to contribute to sustainable development in CDM host countries. As alluded to by Driesen and others,²⁵ HFC-23

destruction and 'end of pipe' projects fail to contribute much positively to the society where the project is based. Much literature has suggested that CDM effects on non-Annex I countries are not positive in sustainable development and environmental terms,²⁶ with the CDM criticised for its 'poor' performance²⁷ and some CDM projects regarded as 'scams'.²⁸ The CDM has been dismissed as 'designed to help the rich and not to assist the poor to achieve sustainable development'.²⁹ The better view is perhaps not to view the CDM in zero sum terms, particularly since climate change is a global issue requiring global solutions. This paper will evaluate whether such harsh criticism is justified, particularly in regards to the charge of failing to promote sustainable development.

It is worth briefly mentioning some advantages of the CDM. Whilst it will be shown that concerns over some specific projects such as HFC-23 destruction are warranted, it is unfair to maintain that non-Annex I countries have not benefited at all from CDM projects. The most obvious advantage is that emission reductions have occurred,³⁰

20 D.M. Driesen, 'Linkage and Multilevel Governance', 19 *Duke Journal of Comparative & International Law* 389, 411 (2009). See also the Multifaceted 'Silver Buckshot Approach' advocated by Prins and Rayner: G. Prins and S. Rayner, *The Wrong Trousers: Radically Rethinking Climate Change Policy 26-27* (Oxford: James Martin Institute for Science and Civilization, 2007).

21 This is discussed in more details in the 'sustainable development in the CDM' section below.

22 See, e.g., Prins and Rayner, note 20 above at 35-37.

23 See Kyoto Protocol to the United Nations Framework Convention on Climate Change, note 1 above, Article 12(3)(a).

24 It is beyond the scope of this paper to consider additionality in depth but for a good summary of the issues regarding additionality, see A. Michaelowa, 'Determination of Baselines and Additionality for the CDM: A Crucial Element of Credibility of the Climate Regime', in F.Yamin ed., *Climate Change and Carbon Markets: A Handbook of Emission Reduction Mechanisms* 289 (London: Earthscan, 2005).

25 See Driesen, note 19 above. See also O. Schwank, *Concerns about CDM Projects Based on Decomposition of HFC-23 Emissions from 22 HCFC Production Sites 1* (Zurich: INFRAS, 2004); 'Kyoto Protocol 'loophole' has cost \$6billion', note 10 above and M. Wara, 'Is the Global Carbon Market Working?', 445 *Nature* 595-596 (2007); Prins and Rayner, note 20 above at 30-31.

26 See, e.g., L. Schneider, *Is the CDM Fulfilling its Environmental and Sustainable Development Objectives? An Evaluation of the CDM and Options for Improvement 72* (Berlin: Oiko-Institut, Report Prepared for WWF, 2007) and Baumert, note 15 above at 387-389.

27 See Driesen, note 20 above at 406.

28 See Prins and Rayner, note 20 above at 31.

29 Centre for Science and Development in India, as quoted in A. Rück, and C. Bals, *The Role of Developing Countries in the Climate Change Regime: Voices from the South* Comment on Climate and Development Issues (Germany: Germanwatch, Working Paper Number 16, 1999), available at <http://www.germanwatch.org/rio/ap16.htm#4>.

30 UNFCCC, *Expected Average Annual CERs from Registered Projects by Host Party*, 30 October 2009, available at <http://cdm.unfccc.int/Statistics/Registration/AmountOfReductRegisteredProjPieChart.html>. Whilst commentators might dispute some of these CERs, it seems unduly pessimistic to insist that none have helped developing countries environmentally by, for example, introducing a new renewable energy project, of which the CDM has a significant number: see UNEP Risoe Centre, *Percentage Share of the Total Number of Projects of Four Largest CDM Categories in Numbers*, UNEP Risoe CDM/JI Pipeline Analysis and Database, 1 October 2009, available at <http://cdmpipeline.org/cdm-projects-type.htm#3>.

although academics who dispute the veracity of some of these reductions would question this.³¹ The CDM's ability to pick the 'low-hanging fruit' of greenhouse gas emissions is advantageous and provides incentives for developing countries to partake in the climate change regime.³² At the very least, the CDM has surely raised an awareness of climate change issues and policy amongst developing countries.³³ Involving developing countries in the climate change regime now, even through a flawed mechanism, is better than excluding them altogether. Building 'capacity and experience' should help developing countries if they take on binding commitments in the future.³⁴ Spreading climate change awareness is still probably better than nothing. But spreading awareness and involving developing countries in a softly-softly approach will be insufficient to mitigate climate change and promote sustainable development in the long term. Projects have occurred that might bring some sustainable development benefits to developing countries. In the long term sustainable development and decarbonisation should be doggedly pursued. Below it is discussed whether the CDM can contribute to sustainable development or whether in fulfilling its awareness raising, easy emission reductions campaign it has already come to the end of its useful life.

3 SUSTAINABLE DEVELOPMENT IN THE CDM

3.1 Sustainable Development in the CDM - an introduction

The type of CDM projects that occur and their contributions to sustainable development are important to the efficacy of the CDM. If emission reductions occur, it is still crucial for the environmental integrity of the mechanism that projects do not damage the environment and contribute to good environmental practice in the future. The purpose of the CDM is partly to assist non-Annex I countries in achieving sustainable development,³⁵ which the Marrakesh Accords confirmed.³⁶ The CDM has a broad focus 'on both environmental and developmental goals'.³⁷ In ensuring emission reductions are met, projects should not neglect sustainable development. This is vital so that the trajectories of growth and production in developing countries can be 'decarbonised'.³⁸ The main point about decarbonisation is that prevention is better than the cure. Sustainable development represents a tremendous opportunity to prevent greenhouse gas

31 See Yamin ed, note 24 above. For papers questioning how genuine reductions are, see Baumert, note 15 above at 404; Schneider, note 26 above at 44 and P. Castro, and A. Michaelowa, *Empirical Analysis of Performance of CDM Projects 37* (Zurich: Institute of Political Science, Climate Strategies Report, 2008), available at www.indiaenvironmentportal.org.in/files/empirical-done.pdf.

32 R. MacWhinney, 'Reducing HFC-23: A Crucial Component of the Battle Against Global Warming', 32 *Evolution Markets*, 29 October 2007, available at http://new.evomarkets.com/pdf_documents/HFC-23%20Carbon%20Credits.pdf.

33 See Baumert, note 15 above at 389.

34 *Id* at 383.

35 See Kyoto Protocol to the United Nations Framework Convention on Climate Change, note 1 above, Article 12(2).

36 Modalities and Procedures for a Clean Development Mechanism as Defined in Article 12 of the Kyoto Protocol, Decision 17/CP.7, in Report of the Conference of the Parties, Seventh Session, Marrakesh, 29 October-10 November 2001, Vol. II, Doc. No. FCCC/CP/2001/13/Add.2 (2002).

37 H. Wilkins, 'What's New in the CDM?', 11/2 *Review of European Community and International Environmental Law* 114, 158 (2002).

38 C. Figueres and K. Newcombe, *Evolution of the CDM: Toward 2012 and Beyond*, 2007, available at http://figueresonline.com/publications/Post_2012_CDM.pdf. See also G. Prins et al., *How to Get Climate Policy Back on Course 10-11* (Oxford: Institute for Science, Innovation and Society, University of Oxford, 2009), available at http://sciencepolicy.colorado.edu/admin/publication_files/resource-2731-2009.17.pdf. On development pathways, see Metz ed., note 18 above.

emissions occurring in the first place. It is these sustainable development solutions, these preventative measures, which should be taken rather than 'curing' non-Annex I countries in the future. Development trajectories will become ever more carbon intensive as time goes on under the business as usual model. If we want to shut the stable door on climate change before the carbon has bolted, sustainable development should be encouraged as much as possible. The CDM could play an important role in this.

Decarbonisation of the economies of developing countries is hugely important. This will lead to large emission reductions in the long term. Emissions from developing countries are likely to become more and more important and make up an ever larger share of global emissions as their economies grow.³⁹ India and China are likely to be even larger emitters of greenhouse gases in the future.⁴⁰ Thus changing the development path and reducing the carbon intensity of the economies of non-Annex I parties is crucial to achieving a low carbon future. In the long term, this might well be where the battle against greenhouse gas emissions and climate change is won or lost. Populations in developed countries are set to increase far less rapidly or even decline, whilst populations in the developing world continue to expand.⁴¹ Unfortunately, in the short term, some projects that contribute significantly to sustainable development, such as smaller projects in the least developed countries, are comparatively financially unattractive to investors. There might even be a 'trade-off' between cheap emission reductions and contributions to sustainable development.⁴² Paradoxically, it might be suggested that the twin

objectives of the CDM are at best difficult to marry together and at worst perhaps even mutually exclusive. There is a distinction to be made between reducing greenhouse gas emissions and addressing climate change,⁴³ and between market mechanisms and sustainable development.⁴⁴ Regarding the latter, although the CDM has stated it wants to achieve these dual aims, succeeding in both has been highly problematic. In fact, a move decisively toward either aim could mean the relationship between both fails.⁴⁵ The market mechanism and emission reductions part of the CDM is currently being prioritised, to the detriment of sustainable development. This is causing the relationship to fail, as sustainable development is jettisoned to an unacceptable extent.

It might be argued that there is little point in pursuing two different aims. Market liberalism's deference to economics and low prices seems to have little to do with the Brundtland Report's concern about sustainable development.⁴⁶ The Brundtland Report speaks of future generations,⁴⁷ but mentions little of prices and liberal economic systems. Policy makers seem reluctant to question why they are asking the CDM to perform an impossible, perhaps schizophrenic task. The CDM cannot have its cake and eat it, and increasingly looks like a jack of two trades, but master of neither. Sustainable development and market forces work far from perfectly together in tandem.⁴⁸ In fact, as sustainable development is a positive externality that is not priced in to the market, the market can fail.⁴⁹ This failure is embodied in choosing the cheapest emissions reductions rather than the most beneficial

39 J. Hawksworth, *The World in 2050: Implications of Global Growth for Carbon Emissions and Climate Change Policy 12* (UK: PricewaterhouseCoopers, 2006); see Prins and Rayner, note 20 above at 11 and Driesen, note 20 above at 397.

40 *Id.* at 12.

41 'Visualisations: OECD vs World Population', *Many Eyes Website*, 4 June 2008, available at <http://manyeyes.alphaworks.ibm.com/manyeyes/visualizations/oecd-vs-world-population>.

42 M. Kenber, 'The Clean Development Mechanism: A Tool for Promoting Long-term Climate Protection and Sustainable Development?', in Yamin ed., note 24 above at 263, 285.

43 See Prins and Rayner, note 20 above at *v.*

44 See Driesen, note 19 above at 21.

45 *Id.* at 69.

46 *Id.* at 24.

47 The definition of sustainable development as provided in the World Commission on Environment and Development report is the development that 'meets the needs of the present without compromising the ability of future generations to meet their own needs', see World Commission on Environment and Development (WCED), *Our Common Future* (Oxford: Oxford University Press, 1987).

48 See Driesen, note 19 above at 24-25.

49 This is discussed in more depth in 'sustainable development as a positive externality' below.

project in the long term. Such choices mean that a technological benefit is often provided that will 'only help the current generations, not future generations'.⁵⁰

Put another way, dressing market mutton as sustainable development lamb does the climate change regime no favours, in the CDM context or any other. If the CDM is just a market mechanism with the sustainable development externality not priced in or achieved to a meaningful extent, CDM would be as well to ditch sustainable development altogether. The charade of developing country governments confirming these projects contribute to sustainable development, when in reality many projects do no such thing, is futile. No amount of sustainable development lipstick will change what the CDM really is – a market mechanism. Dressing the CDM up with soothing but toothless references to sustainable development is at best unhelpful and at worst misleading to policy makers who think that CDM is doing something that it is not. It has been argued that without acknowledging the Kyoto Protocol's shortcomings, more of the same, failing policies will be demanded.⁵¹ The same can be said for a misleading CDM. Below, it is argued that sustainable development is not adequately reflected in CDM projects. This raises question marks over what the CDM wants to achieve and whether it should be reformed, or even abandoned altogether.

3.2 Sustainable Development as a Positive Externality

An important issue to consider is that currently under the CDM only the reduction of greenhouse gas emissions is given a monetary value in the form of CERs. Conversely, contributions to sustainable development are not monetised. Thus the bizarre situation arises where one key objective of the CDM is not given a price, even though the CDM 'has a dual objective'.⁵² This lack of a monetary incentive for the second key aim of the CDM makes it less

likely that the CDM will achieve both its stated goals. In a market mechanism, it is axiomatic that investment money will chase the monetised aim. In the language of economics, sustainable development concerns are mere 'externalities' to the monetised goal of reduced carbon emissions.⁵³ 'Positive spillovers'⁵⁴ of sustainable development are not properly accounted for in the CDM market mechanism. The CDM fails to properly acknowledge the positive externality and spillovers of the sustainable development aspects of projects, which could help non-Annex I countries towards a low carbon future. Basic economic theory dictates that externalities cause too much or too little of a good to be produced or consumed, which might lead to market failure.⁵⁵ In the case of CDM, the positive externality of sustainable development is not monetised. Thus projects that contribute to sustainable development are undervalued and are not as common as they would be were this externality priced into CERs. The market fails by not pricing these externalities and spillovers.

There is evidence to suggest that the sustainable development criterion of CDM projects is not being taken seriously. In some cases 'development benefits are often more hypothetical than real'.⁵⁶ The Marrakesh Accords state that the host country should decide whether a project contributes to sustainable development.⁵⁷ It is not hard to imagine a government allowing a highly profitable project, issuing many CERs, without properly investigating sustainable development issues that are given no monetary value. The trade-off between the two CDM aims will fall in favour of the monetised one.⁵⁸

⁵⁰ See Driesen, note 19 above at 24.

⁵¹ See Prins and Rayner note 20 above at 7.

⁵² See Schneider, note 26 above at 61; B. Pearson, 'Market Failure: Why the Clean Development Mechanism Won't Promote Clean Development', 15(2) *Journal of Cleaner Production* 247 (2007).

⁵³ See, e.g., Driesen, note 19 above at 65-66.

⁵⁴ *Id.* at 45-49.

⁵⁵ P. Maunder, Danny Myers and Nancy Wall, *Economics Explained* 71 (New York: Harper Collins, 3rd edn., 2000).

⁵⁶ K. Brown et al. How do CDM Projects Contribute to Sustainable Development? 4 (Norwich: Tyndall Centre, Technical Report 16, 2004).

⁵⁷ E. Boyd et al., *The Clean Development Mechanism: An Assessment of Current Practice and Future Approaches for Policy* 16 (Norwich: Tyndall Centre, Working Paper Number 114, 2007).

⁵⁸ Y.F. Huang and T. Barker, *The Clean Development Mechanism and Sustainable Development: A Panel Data Analysis* 3 (Norwich: Tyndall Centre, Working Paper Number 130, 2009).

When governments confirm a project's contribution to sustainable development, if there is no agreed criterion or definition of what this means, it might be the case that host countries do not take sustainable development seriously. Studies have suggested that projects failed to deliver benefits aside from emission reductions.⁵⁹ It has also been suggested that there could be a 'race to the bottom in sustainable development standards', with these standards being severely compromised as governments chase investment.⁶⁰

3.3 The Problems of Defining Sustainable Development

The overarching problem when discussing whether a project contributes to sustainable development is defining what 'sustainable development' means. Its meaning varies from country to country.⁶¹ Finding a precise definition is problematic. Should nuclear energy, for example, be deemed sustainable? It results in less greenhouse gas emissions than consuming fossil fuels, even though problems of what to do with nuclear waste have not yet been satisfactorily solved. The Marrakesh Accords answer in the negative.⁶² However, it is not beyond

the realms of fantasy to argue that nuclear energy could contribute to some definition of sustainable development, if we only define sustainable development as reducing carbon emissions. If possible, more explicit statements should be made under the CDM, in order to clarify what does and does not come under the umbrella of sustainable development. Problems in defining sustainable development should not necessarily preclude CDM projects from attempting to boost general sustainability aims. It has been suggested that a solution to this problem 'would be the adoption of strong, clearly enunciated, criteria for sustainable development, whether at the national or international levels'.⁶³ Below it will be argued the likelihood of such an agreement is extremely slim.⁶⁴

In spite of the difficulty of defining sustainable development it is worth trying to form some common strands of thought. The Brundtland Commission's aforementioned definition⁶⁵ is a useful, if imperfect, start. The UNDP's Human Development Index might also show some indicators that would point to a CDM project more focused on sustainable development.⁶⁶ Sustainable development seems to have a focus on the future. It solves not just short term issues, but attempts to build capacity and knowledge that will allow countries to develop in the long term too. The word 'sustainable' in this context seems synonymous with 'long-term benefits', as opposed to short term CDM projects purely focused on CER profits. Long term benefits might include long-term employment prospects, improved social welfare,⁶⁷ permanent transfer of superior technology and improved infrastructure facilitating development after the project is finished. Capacity building is also hugely important.

The crucial point is leaving a legacy in the host country so that benefits continue after the project ends. When this paper discusses sustainable development, it is really referring to long term,

59 See Brown et al., note 56 above at 4; Boyd et al., note 57 above at 20; International Institute for Sustainable Development, *Clean Development Mechanism: Realising the Development Dividend*, 2007, available at <http://www.iisd.org/climate/global/cdm.asp#five>; K.H. Olsen, *The Clean Development Mechanism's Contribution to Sustainable Development: A Review of the Literature*, (No exact date), available at http://www.cd4cdm.org/Publications/CDM&SustainDevelop_literature.pdf; Schneider, note 26 above at 47; C. Sutter and J.C. Parreno, 'Does the Current Clean Development Mechanism (CDM) Deliver its Sustainable Development Claim? An Analysis of Officially Registered Projects', 84/1 *Climatic Change* 75-90 (2007) and A. Michaelowa and K. Michaelowa, *Climate or Development: Is ODA Diverted From Its Original Purpose?* 1 (Hamburg: Hamburg Institute of International Economics, HWWI Research Paper 2, 2005).

60 A. Cosbey et al., *Realizing the Development Dividend: Making the CDM Work for Developing Countries* 43 (Manitoba: International Institute for Sustainable Development, 2005).

61 See Huang and Barker, note 58 above at 4.

62 See *Modalities and Procedures for a Clean Development Mechanism as Defined in Article 12 of the Kyoto Protocol*, note 36 above at 20.

63 See Cosbey et al., note 60 above at 43.

64 As discussed in the 'improving the development dividend' section.

65 See Driesen, note 19 above.

66 S. Huq, *Applying Sustainable Development Criteria to CDM Projects: PCF Experience* 8 (Washington, DC: Prototype Carbon Fund, World Bank, PCF Report 10, 2002).

67 See Boyd et al., note 57 above at 33.

environmentally sound solutions to development that build capacity, technology and social welfare in developing countries and particularly in least developed countries. This might be an imperfect attempt at defining an essentially contested concept. However it is important to lay down some criteria so that it is possible to discuss sustainable development in the climate change context. The creation of benchmarks such as 'The Gold Standard',⁶⁸ which aims to 'provide assurance that CDM projects will deliver real emissions reductions and a clear contribution to sustainable development',⁶⁹ seems to suggest that laying down some criteria that can be agreed on is indeed possible. It is worth noting that the Gold Standard criteria have significant drawbacks, such as problems with labelling sustainable development,⁷⁰ its voluntary nature,⁷¹ its small share of the overall market⁷² and its targeting 'stand-alone' projects when many projects seek to change existing industrial processes.⁷³ There is no reason to think another set of rules attempting to define sustainable development would not encounter similar problems.

Some types of projects, such as renewable energy, or energy efficiency projects, as well as those with demonstrable long-term benefits for the host developing country,⁷⁴ are more likely to contribute

to sustainable development. Thus arguably these projects should be given the honorific status of contributing to sustainable development. However, forming a concrete definition of what sustainable development entails involves extremely complex and politically difficult value judgements. If the CDM is to exist in the future with its sustainable development aim intact, tough political decisions will have to be taken. Below it is argued creating concrete definitions on sustainable development is a hugely difficult exercise, probably precluding the CDM from meaningfully contributing to sustainable development. This brings into question the very existence of the CDM, certainly in terms of its perhaps fictitious contribution to sustainable development. Below is an example of the type of project that has led to accusations that the CDM neglects sustainable development. This is followed by a section that suggests the all important 'development dividend'⁷⁵ is highly unlikely to ever be paid.

4

EXAMPLES OF CDM PROJECTS

4.1 HFC-23 Destruction and 'End of Pipe' Projects

The future legacy of a project and its contribution to sustainable development are crucial. Regrettably some CDM projects are more concerned with getting CERs issued and then getting out of the country, rather than committing to long term sustainable development. This can be seen with the large numbers of 'end of pipe' projects. Projects such as HFC-23 incineration involve windfall CER profits for investors, without necessarily helping the long term development of the host country. These types of projects have been harshly criticised for not helping the CDM achieve its aim of sustainable development.⁷⁶

⁷⁵ This phrase is taken from Cosby et al., note 60 above.

⁷⁶ See, e.g., No More Perverse Incentives and Windfall Profits for HCFC-22 Production Under CDM, Press Release, 6 December 2008, available at <http://www.no21.org/docs/Press%20release%20Noe21%20HFC23%20methodology.htm> and Schwank, note 25 above.

⁶⁸ See generally The Gold Standard Foundation, *The Gold Standard: Manual for CDM Project Developers* (Geneva: The Gold Standard Foundation, 2006).

⁶⁹ See Kenber, note 42 above at 272-273.

⁷⁰ A. Muller, 'Risk Management in the Clean Development Mechanism (CDM) - The Potential of Sustainability Labels', in B. Hansjürgens and R. Antes eds., *Economics and Management of Climate Change: Risks Mitigation and Adaptation* 193, 203, 204 (New York: Springer, 2008).

⁷¹ See Muller, 'How to Make the Clean Development Mechanism Sustainable - The Potential for Rent Extraction', 35/6 *Energy Policy* 3203- 3205 (2007).

⁷² A. Michaelowa, CDM: Current Status and Possibilities for Reform 14 (Hamburg: Hamburg Institute of International Economics (HWWI), HWWI Research Paper Number 3 2005) and C. Hepburn, Response to Defra Consultation on Voluntary Carbon Offsets, 13 April 2007, available at http://www.jpmorganclimatecare.com/media/documents/pdf/hepburn_2007_response_to_defra_offset_consultation.pdf.

⁷³ S. Foot, 'An Evaluation of the Present Clean Development Mechanism', 16/3 *Environmental Law & Management* 125-134, 127 (2004).

⁷⁴ See Boyd et al., note 57 above at 33-34.

HFC, PFC and N₂O projects only account for 2.1 per cent of total CDM projects but represent a disproportionately high 25 per cent of the CERs by 2012.⁷⁷ This indicates the huge CER potential of this criticised form of CDM project. Clearly these types of projects are an important part of the CDM and should be properly examined.

HFC-23 projects were described as 'one of the most controversial issues' of the CDM.⁷⁸ In September 2007 the parties under the Montreal Protocol agreed to speed up the process of phasing out the production of ozone depleting substances in all countries. HCFC-22 and its by-product HFC-23 are such substances. HCFC-22 is a substitute for the CFCs that damage the ozone layer, although HCFC-22, and in particular its unwanted by-product, are hardly environmentally friendly. HFC-23 is a greenhouse gas with a global warming potential of 11,700. Due to its massive global warming potential, the destruction of this substance can lead to a huge amount of CERs being issued, as indicated above by the large share of CER issuance. These projects have been criticised as allowing HFC-23 destruction to be eligible for CERs at a cost of 'nearly \$6 billion'.⁷⁹ It was suggested that it would be far cheaper at just \$100 million to pay HCFC-22 producers to destroy HFC-23 rather than giving them an estimated \$6 billion in CER credits to perform exactly the same function.⁸⁰ These projects have been derided for giving a windfall to a few industrial sites and as a 'money machine',⁸¹ that offers little in the way of sustainable development and long term benefits to the host country.⁸²

It has also been argued that CER sales around the HFC-23 destruction process would actually allow HCFC-22 producers to increase production as the CER sales make continued production profitable.⁸³

This argument, that these projects could provide perverse incentives to continue to produce HCFC-22, is a big problem and clearly contrary to emission reductions and sustainable development aims. The production of such HFCs damages the environment. However it was feared that HCFC-22 production could actually be boosted by the CDM as CERs would give a financial incentive to build new facilities that produce HFCs. Clearly such an effect would be highly detrimental to the climate change regime and therefore must be avoided.

Issuing large amounts of CERs for HFC-23 projects takes away finance from more environmentally friendly technologies, to the long-term detriment of the climate change regime.⁸⁴ One approach to the HFC problem is to exclude such projects from being given CERs in the future.⁸⁵ This is fair as HFC-23 destruction neglects the sustainable development aim of the mechanism. Far from ensuring developing countries pursue a sustainable development path viable in the long term, this type of CDM project with its perverse incentives could have the disastrous effect of embedding bad practice in developing countries. This can be contrasted with the view that HFC-23 destruction remains a kind of low lying fruit that the CDM should pick, as this will reduce greenhouse gas emissions and encourage early action.⁸⁶ On balance it seems that the possibility of perverse incentives negates any emission benefits that might occur. Happily the problems with HFC-23 projects have been acknowledged. New facilities producing HCFC-22 are ineligible for consideration as a CDM project. Worries have been expressed that now this loophole is closed, others will be found and exploited.⁸⁷ The problems regarding HFC-23 destruction indicate the issues that CDM projects have in terms of sustainable development contributions.

77 'Number (percentage) of CDM projects in each category of types', *UNEP Risoe Centre Website*, 1 October 2009, available at <http://cdmpipeline.org/cdm-projects-type.htm#2>.

78 Carbon Finance, *The Credit for Destruction*, 15 February 2007, available at <http://www.carbon-financeonline.com/index.cfm?section=features&action=view&id=10420>.

79 See 'Kyoto Protocol 'loophole' Has Cost \$6billion', note 10 above.

80 *Id.*

81 See Prins and Rayner, note 20 above at 31.

82 See Carbon Finance, note 78 above.

83 See Schwank, note 25 above at 4.

84 See Carbon Finance, note 78 above.

85 See Schneider, note 26 above at 62.

86 R. MacWhinney, 'Reducing HFC-23: A Crucial Component of the Battle Against Global Warming', 32 *Evolution Markets* 1, 29 October 2007, available at http://new.evomarkets.com/pdf_documents/HFC-23%20Carbon%20Credits.pdf.

87 See Prins and Rayner, note 20 above at 31.

4.2 Renewable Energy, Small Scale Community and Energy Efficiency Projects

Three sectors have been identified as underperforming in the CDM, making it harder for the CDM to achieve its sustainable development objectives. Were there more of these kinds of projects, the CDM could more genuinely contribute to sustainable development. Those underperforming sectors are the renewable energy sector, small scale community projects and industrial energy efficiency.⁸⁸ Compared to projects such as HFC-23 destruction, these sectors seem to have real sustainable development benefits. In spite of the problems in defining sustainable development, it is fair to say that the above sectors are more likely to have long term benefits for the host country than end of pipe projects. Sustainable development benefits might include economic, social or environmental benefits, with each category also able to have sub-criteria.⁸⁹ An incomplete list of these criteria might include advantages such as employment, improving cost effectiveness or technology, training, improving health, poverty reduction, good governance, greenhouse gas emission reductions, less pollution, protecting bio diversity, and many more.⁹⁰ Although there is not a precise definition of sustainable development there seems to be some consensus on the types of criteria that might be used to form a more exact definition. Using these criteria we can see that the CDM is not promoting sustainable development as it should be.

Of the three sectors mentioned renewable energy is seen as a sensible, long term way to retreat from a carbon intensive economy. CDM should be used to encourage this transformation as it is in the long term interests of the environment. These renewable projects provide significant sustainable development benefits.⁹¹ Advantages of such projects include an

'essentially infinite' supply of energy, relatively low and falling operating costs and a hedge against the rising prices of fossil fuels.⁹² Renewable energy projects have been created under the CDM. In terms of total number of projects, renewables come up on top, at around 60 per cent of total projects.⁹³ Whilst this sounds positive, the CERs generated are also relevant. In terms of CERs issued, renewables and HFC and N20 destruction are on a similar level and previously the latter generated far more CERs.⁹⁴ HFC projects account for the majority of CDM payments for the period up to 2012.⁹⁵ This is significant as large climatically irrelevant projects generating cheap credits in huge blocks take away CERs from renewable energy projects. In terms of numbers of projects renewable energy looks well placed in the CDM. In terms of the number of CERs it seems there is more work to do for sustainable development to be better promoted. More renewable energy projects and the issuance of more CERs in relation to renewable energy projects should lead to developing countries having less carbon intensive economies in the future. This is not the case for HFC projects, whose CER riches deprive more worthy projects of finance.

The success and high percentage (but not necessarily high CER numbers) of renewable energy projects can be contrasted with small-scale community-based projects. These projects offer comparatively high sustainable development advantages, but get little attention from investors because smaller amounts of CERs are issued. Smaller projects seem increasingly commercially unviable with low carbon prices.⁹⁶ Their low mitigation potential because of their necessarily small scale might be a constraining factor.⁹⁷ However, these projects should be promoted more widely because of their sustainable

⁸⁸ See Cosbey et al., note 60 above at 23.

⁸⁹ *Id.* at 14-15.

⁹⁰ This incomplete list of sustainable development criteria is taken from Cosbey et al., note 60 above at 15. Other good sources for judging sustainable development in CDM projects include Huq, note 66 above at 12 and The World Wide Fund for Nature, note 68 above at 20-22.

⁹¹ See Cosbey et al., note 60 above at 23.

⁹² Umwelt Bundesamt, *Renewable Energy and the Clean Development Mechanism: Potential, Barriers and Ways Forward. A Guide for Policy Makers 3* (Berlin: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, 2007).

⁹³ See UNEP Risoe Centre note 30 above.

⁹⁴ UNEP Risoe Centre, *Growth of Total Expected Accumulated 2012 CERs*, 1st October 2009, available at <http://cdmpipeline.org/cers.htm#1>.

⁹⁵ See Prins and Rayner, note 20 above at 30.

⁹⁶ See Cosbey et al., note 60 above at 23.

⁹⁷ *Id.*

development benefits and the scope for replicating such projects and imbedding environmentally good practice in developing countries in the long term.⁹⁸ Indeed there are regulations to this effect. Small scale projects enjoy simplified modalities and procedures, so that the complications and costs of the CDM project cycle do not completely deter smaller projects.⁹⁹ In spite of this, larger projects make up the majority of CDM projects.¹⁰⁰ Arguably these simplified modalities and procedures have been insufficient in encouraging smaller CDM projects. More needs to be done to encourage small scale projects that are highly beneficial to sustainable development. The energy efficiency sector is also praised, but somewhat underdeveloped under the CDM. The prospects of such energy efficiency projects seem good in terms of long term environmental and economic benefits.¹⁰¹ Policies to stimulate more projects in these key sectors are discussed in the 'improving the development dividend' section.

4.3 The Location of CDM Projects

The concentration of CDM projects in just a few countries is an issue that should be addressed. A wide geographical spread of projects would allow the CDM to contribute to sustainable development more equally and effectively. Addressing this problem could boost even a vaguely defined notion of sustainable development. Generally small community based projects, especially those in least developed countries, offer the greatest sustainable development potential,¹⁰² whilst unfortunately often offering fewer emission reduction opportunities. The worrying trend of the clustering of CDM projects in a few developing countries is

not in line with what parties to the Kyoto Protocol intended. The need 'to promote equitable geographic distribution of CDM projects' has been stressed.¹⁰³

The vast majority of CDM projects are located in a few, large developing countries. Brazil, India and China account for over 75 per cent of expected annual CERs.¹⁰⁴ Whilst these big developing countries dominate the market for hosting CDM projects, the least developed countries where capacity building is required most could get left behind. The aims of sustainable development and its benefits should not be concentrated on just a few states. Steps should be taken to improve the geographical distribution of CDM projects, perhaps including targets, incentives or quotas¹⁰⁵ in order to spread the benefits of CDM around the developing world. As with increasing CER issuance for projects with better long-term development advantages, a policy of increasing the number of CERs issued when projects occur in those least developed countries, could be pursued.¹⁰⁶ The CDM is a market orientated mechanism, thus it seems appropriate and justifiable to intervene in that market when it fails. If anything in the recent context of financial turmoil, intervening in the market to achieve better, more equitable, sustainable results, is easier to justify than it has ever been in the lifespan of the Kyoto Protocol. Taming the beast of the market has never been more necessary. If we acknowledge that, in some respects, the CER market is not working, it should be possible to intervene in that market. This would not involve taking away CERs that had already been issued or projects that had already begun. However, for future registration of CDM projects it might be a policy worth considering. This might improve the market and better serve the sustainable development aim of the CDM.

⁹⁸ *Id.*

⁹⁹ See Yamin, note 14 above at 179; *see also* Simplified Modalities and Procedures for Small-scale CDM Project Activities, Annex II, Decision 21/CP.8, in Report of the Conference of the Parties to UNGCCC, Eighth Session, New Delhi, 23 October-1 November 2002, Doc. No. FCCC/CP/2002/7/Add.3 (2003).

¹⁰⁰ The figure is 54.46 per cent, *see* UNFCCC, Registered Projects Activities by Scale, 30 October 2009, available at <http://cdm.unfccc.int/Statistics/Registration/RegisteredProjByScalePieChart.html>.

¹⁰¹ *See* Cosbey et al., note 60 above at 23.

¹⁰² *See* Huq, note 66 above at 22.

¹⁰³ *See* Modalities and Procedures for a Clean Development Mechanism as Defined in Article 12 of the Kyoto Protocol, note 36 above at 20.

¹⁰⁴ UNFCCC, Expected Average Annual CERs by Host Party, 30 October 2009, available at <http://cdm.unfccc.int/Statistics/Registration/AmountOfReductRegisteredProjPieChart.html>.

¹⁰⁵ *See* Boyd et al., note 57 above at 33.

¹⁰⁶ *Id.*

From a purely financial, market-based perspective, trying to initiate projects where costs are high due to a poor investment environment or other reasons would be problematic, because the CDM is trying to achieve emission reductions at the lowest possible cost. This means that the CDM naturally, as a market mechanism, ruthlessly picks the 'low lying fruit' of cheap greenhouse gas emission reductions such as HFC-23 destruction in countries that already have a good investment environment. It bypasses other projects that have more expensive emission reductions but more sustainable development benefits.¹⁰⁷ Picking low lying fruit is not necessarily a bad thing,¹⁰⁸ but it achieves little in terms of long term sustainable development. It is no coincidence that countries hosting the most CDM projects also enjoy the most Foreign Direct Investment (FDI). This is largely due to reasons such as better infrastructure, access to markets and stability in the macroeconomic and political sphere.¹⁰⁹ For example, China is a big winner in terms of CER issuance, with expected annual CERs 58.89 per cent of all those issued¹¹⁰ and is also one of the biggest receivers of FDI. This can be contrasted with Africa, which receives comparatively little FDI or investment through the CDM.¹¹¹ A relatively stable and attractive investment environment will attract FDI as well as CDM projects. It could be argued that as a market mechanism has been created, the results and judgements of the market in concentrating projects in a relatively small number of developing countries should be accepted. This would be to the long term detriment of sustainable development.

The Marrakesh Accords seemed to foresee this problem. It was decided that Annex I countries should assist 'in particular the least developed and small island developing states... with building capacity in order to facilitate their participation in the CDM'.¹¹² However, Annex I parties have still

not done enough to build capacities in the least developed countries. Consequently CDM projects are concentrated in bigger, more developed countries. That CDM projects in least developed countries are exempt from the share of proceeds to assist with the cost of adaptation is a welcome step,¹¹³ but that two per cent difference is arguably insufficient to conclusively swing investors towards backing CDM projects in riskier, less investment-friendly countries. These risks in the least developed countries are problematic for investors. Whilst being unable to eradicate those risks within the climate regime, it might be possible to compensate for those risks. Compensation could be in the form of creating incentives for projects in countries that ordinarily spook investors in to taking their money elsewhere. It is not just about removing the risks. It is also about speaking just about the only language investors know by giving them monetary compensation - a carrot to capitalists who would otherwise not invest. The CDM is a market mechanism, and markets react to incentives.¹¹⁴ Examples of incentives could include a least developed country subsidy. Conceptually this can be justified by the existing policy of exempting CDM projects in least developed countries from adaptation fund contributions. This means the international community has already recognised that the inequitable geographical spread of CDM projects is problematic. By creating incentives for CDM projects in the least developed countries, the CDM could play an important role in many countries, not just a select few. This should hopefully make for more even, equitable and sustainable development. This would ultimately help the transition to a low carbon future so crucial for the climate change regime to succeed.

Addressing this inequitable geographical distribution of CDM projects is much more easily said than done. In terms of introducing a least developed country subsidy, it is difficult to think of where exactly this extra money would come from in the international community. Such funding is difficult to acquire at

¹⁰⁷ See Cosbey et al., note 60 above at 46.

¹⁰⁸ See Driesen, note 20 above at 409.

¹⁰⁹ A. Cosbey, *Foreign Investment: Making it Work for Sustainable Development* 19-23 (Manitoba: International Institute for Sustainable Development, 2002).

¹¹⁰ See UNFCCC, note 104 above.

¹¹¹ See Cosbey, note 109 above at 19.

¹¹² See *Modalities and Procedures for a Clean Development Mechanism as Defined in Article 12 of the Kyoto Protocol*, note 36 above at 23.

¹¹³ This decision was also part of the Marrakesh Accords, *Id.* at 23.

¹¹⁴ C. Carr and F. Rosembuj, 'Flexible Mechanisms for Climate Change Compliance: Emission Offset Purchases under the Clean Development Mechanism', 16 *New York University Environmental Law Journal* 44, 61 (2008).

the best of times, never mind in the midst of the greatest financial crisis since the Great Depression. With governments worldwide either bailing out banks or instigating huge fiscal stimuli, it is hard to see from where these subsidies would come. Even if such funds could be found intervening in the market to such an extent would be politically difficult if not impossible. The CDM remains a market mechanism. It remains the case that sustainable development and market liberalism maintain an uneasy relationship and a move too firmly towards sustainable development,¹¹⁵ in the form of subsidies, could adversely affect the market liberalism upon which the CDM is based. Securing international agreement on such subsidies would also be hugely problematic. Below it is argued such a scheme, like others aimed at improving the development dividend, is unlikely to ever to come to fruition.

5

IMPROVING THE 'DEVELOPMENT DIVIDEND'¹¹⁶ OF THE CDM

It has been suggested that the CDM be reformed so that it can better meet its objective of contributing to sustainable development. Defining what sustainable development means is crucial if this goal of the CDM is to be achieved. A set of criteria agreed internationally could help guide, if not define, the notion of sustainable development more precisely. It would be much easier to realise sustainable development within the CDM if this phrase was given some internationally agreed guiding principles.¹¹⁷ It might be more realistic to expect guiding principles that countries use on a case-by-case basis, rather than an agreement on a strict definition, but an elaboration on principles and guidelines would still be a worthwhile exercise.¹¹⁸ This would be a difficult task, as international diplomacy is fraught with bargaining and wrangling.

The task of defining sustainable development across more than a hundred radically different developing countries would be nigh on impossible. There are serious issues regarding the sovereignty of developing countries. Countries do not want to be dictated to as to what sustainable development should mean for them.¹¹⁹ These countries each have their own governments who best know what sustainable development should mean in their particular national circumstances. Using an international, abstract set of possibly alien criteria in all developing countries would be unwise. It remains unlikely that decisions regarding sustainable development could be made. Developing countries are likely to resist a one-size-fits-all definition for sustainable development. Priorities vary hugely both within developing countries but also between them.¹²⁰ Changing and differing priorities make it more difficult to decide on a fixed definition of sustainable development. Universalism, insisting on agreement from all governments, leads to 'the lowest of common denominators'.¹²¹ Getting well over 100 countries, from landlocked Tajikistan to island state Tuvalu, to agree on what sustainable development means would probably be the diplomatic equivalent of sprinting towards a brick wall. If the CDM is to have a future and sustainable development is to continue to be a main aim of the mechanism, then it is surely the case that more guidance on what this key aim means is required. Unfortunately it seems that no meaningful international agreement on the definition of sustainable development will be forthcoming. This brings into question the very existence of the CDM, or at the very least its increasingly tenuous commitment to sustainable development.

As previously identified, sustainable development benefits are not given a monetary value under the CDM. Some solutions have been offered to ameliorate this situation. For example, projects which have limited or no benefits for sustainable development could have the number of CERs issued reduced, whilst CERs given to projects contributing to sustainable development would stay the same.¹²²

¹¹⁵ See Driesen, note 19 above at 21, 69.

¹¹⁶ This phrase is taken from Cosby et al., note 60 above.

¹¹⁷ See Cosby et al., note 60 above at 44.

¹¹⁸ *Id.*

¹¹⁹ See Kenber, note 42 above at 265.

¹²⁰ See Cosby et al., note 60 above at 22.

¹²¹ See Prins and Rayner, note 20 above at 27.

¹²² See Schneider, note 26 above at 61.

This would mean that projects that significantly contribute to sustainable development would have a higher market value.¹²³ In theory overall there would be a smaller supply of CERs, leading to a future contraction in supply pushing prices up. This might make projects contributing to sustainable development more attractive. In practice this is rather simplistic. There seem to be at least four reasons why such a scheme is unlikely to work. Firstly, it is unclear as to what degree CERs should be reduced. Secondly, there seems to be little evidence that a higher range of revised prices would boost sustainable development in the CDM. Thirdly, agreeing the degree of reduction in CERs would be a hugely difficult diplomatic task. Fourthly, and perhaps most problematically, parties would have to agree on what exactly makes one project more conducive to sustainable development than another.¹²⁴ This paper has already suggested this latter point is an extraordinarily difficult hoop to jump through for the CDM to properly contribute to sustainable development.

A quota system is another policy to ensure that sustainable development in the CDM is properly prioritised, or at least put on an equal footing with the aim of reducing greenhouse gas emissions. Under this policy developed countries would commit to a minimum quota of projects that greatly benefit sustainable development, with a certain percentage of the CERs in a country's portfolio coming from such projects.¹²⁵ The natural complement to this policy would be to provide disincentives to projects that issue a high amount of CERs but have few sustainable development benefits.¹²⁶ In what is described as 'an intentional distortion of the market to favour high-benefit projects', certain 'sustainable' types of projects could gain twice or three times as many CERs, whilst projects failing to create sustainable development advantages would have CERs cut by a third or half.¹²⁷ This would represent a radical distortion of the market. Such a distortion would no doubt be anathema to CDM investors who

require certainty in order to make investment decisions. This policy is probably too large a departure from established practice. The problems identified in the last paragraph including difficulty in reaching an international agreement and defining sustainable development apply here too. In theory it might be a policy governments could consider. In practice many governments seem more concerned with CER issuance than long term development benefits. Following this through to its logical conclusion, the development dividend is likely to forever be in arrears in the CDM. There seems to be no policy that can be realistically pursued to rectify this. The shareholders of a company would not put up with such a brazen debt *ad infinitum*. Similarly the countries that created the CDM – in effect the shareholders – cannot forever stand by and watch its creation fail to deliver its sustainable development dividend again and again without consequences. The CDM's failure with regards to sustainable development rightly brings into question its very existence.

Sustainable development seems impossible to define internationally amongst many countries. This precludes the option of actions such as market distortion and CER reduction that could help better reflect sustainable development in the CDM. Sustainable development has passed the CDM by. There is little prospect of reforming it to achieve this second aim. The CDM is primarily a market mechanism that picks low lying fruit with little deference to sustainable development. Reforming this global market mechanism would require agreements and definitions that diplomatically and politically are highly unlikely to ever be agreed. CDM reform without a sustainable development definition is impossible as a vital piece of the puzzle is missing. This piece is not likely to be found, so the better view would be to end the charade that the CDM is somehow contributing to sustainable development. The CDM should be earmarked as a pure market mechanism that might reduce emissions, but does not contribute to sustainable development.

Continuing the CDM-sustainable development charade is a recipe for erroneous policy making. Policies should be made and negotiations undertaken with reference to all the correct facts and

¹²³ *Id.*

¹²⁴ *Id.*

¹²⁵ *Id.*

¹²⁶ See Boyd et al., note 57 above at 34.

¹²⁷ *Id.*

information as far as possible.¹²⁸ Policy makers might be seduced into thinking the CDM contributes to sustainable development, especially when both the Kyoto Protocol and CDM host countries state this. During future climate change negotiations policy makers might see that the CDM already contributes to sustainable development and thus decide that no new mechanism or policy is required in this area. This is patently false. In the way that the Kyoto Protocol gave 'an illusion of effective action' and assuaged political concern,¹²⁹ the CDM gives an illusion of contributing to sustainable development. We have learned above that the reality is that the CDM contributes little to sustainable development. The development dividend is not paid. The parties should explicitly say this so the schizophrenic mechanism can be freed from its hitherto impossible task of being two things at once. It can then contribute to the climate change regime by doing what it can do best, namely being a market mechanism that picks low lying fruit and reduces emissions. If there is no low lying fruit left, perhaps it should be abandoned altogether. Climate change mitigation and sustainable development should be pursued elsewhere, through different mechanisms or policies.

6

THE ECONOMIC CRISIS AND ITS EFFECTS ON THE CDM

It would be remiss to conduct this analysis of CDM without a mention of the current financial crisis, which is having an effect on many areas of society globally. The climate change regime does not operate in a political and economic vacuum and the effect of 'the greatest challenge to the world

¹²⁸In terms of knowing all the correct information, it is impossible to know if we are aware of all the issues and facts as climate change is a 'wicked' problem. See Prins and Rayner, note 20 above at 27. It does however, seem prudent not to negotiate on the basis of false information, in this case that the CDM is doing what it says and contributing to sustainable development.

¹²⁹See Prins and Rayner, note 20 above at v.

economy in modern times'¹³⁰ on the CDM and in particular on the carbon price, should be assessed.

Climate change policy and CDM projects are not immune from the turmoil that the financial crisis is causing for the budgets of governments and the economy in general. One issue that has badly affected CDMs has been the collapse of the prices of CERs. The CER price fell to a low of about €7 in February, although has since gained some ground to trade above €12. This is 58 per cent up on its record February low¹³¹ and is indicative of the massive volatility sweeping through the market at present. It was commented in February that at those low prices 'many new emissions reduction projects under the CDM are not viable'.¹³² Indeed just comparing the difference in sentiment between February and March shows the unpredictability and volatility in the market. The volatility is not a new phenomenon as the carbon market also crashed in 2006.¹³³

This is problematic for investors, as one of the most important factors when making an investment decision is certainty. The carbon markets have been described as having 'manic and fantastical qualities reminiscent of the South Sea Bubble of the 1920s'.¹³⁴ With prices being so volatile it makes CERs a less attractive investment, because investors are less certain as to what prices will be in the future. This also affects projects not locked in to previously higher prices. Lack of investor certainty will probably have a detrimental effect on the overall volume of CDM projects. That lack of certainty is combined with low prices of CERs, which have rallied but are still well below last year's levels.¹³⁵

¹³⁰Global Plan for Recovery and Reform, Leaders' Statement from the G20 Summit in London, 2 April 2009, available at <http://www.londonsummit.gov.uk/resources/en/news/15766232/communique-020409>.

¹³¹Carbon Positive, EUA Recovery Extends to Fifth Week, 18 March 2009, available at <http://www.carbonpositive.net/viewarticle.aspx?articleID=1456>.

¹³²Carbon Positive, CER Market Struggles Under Depressed Prices, 23 February 2009, available at <http://www.carbonpositive.net/viewarticle.aspx?articleID=1369>.

¹³³See Prins and Rayner, note 20 above at 20.

¹³⁴*Id.* at 9.

¹³⁵Carbon Positive, EUA Prices Claw Back Lost Ground, 4 March 2009, available at <http://www.carbonpositive.net/viewarticle.aspx?articleID=1432>.

Making rational investment decisions in such an inherently volatile market is extraordinarily difficult. This is hugely problematic for a market mechanism seeking investment.

Low carbon prices are also likely to make CDM projects less attractive to investors, as emission reductions per ton will be less profitable. The low price of CERs could force developers to 'cut corners on additionality and sustainable development aspects of projects'.¹³⁶ A low carbon price makes non-additional projects that do not contribute to sustainable development more likely.¹³⁷ Low carbon prices and volatility in the market, at least partly caused by the current financial crisis, are likely to have a detrimental effect on the fewer CDM projects that do occur. Those CDM projects that still take place might well be of inferior quality in terms of sustainable development.

A further issue related to the economic crisis is that the economies of some Annex I countries have shrunk. The total GDP of the G7 countries was forecast to contract by four per cent in 2009,¹³⁸ but some industrialised economies have since returned to growth, albeit extremely modest growth.¹³⁹ Previously plummeting GDPs and subsequent anaemic growth are likely to have an effect on carbon emissions, which in the face of reduced economic activity will probably be reduced too. This reduction in output has led to the unintended result of reduced emissions.¹⁴⁰ Fewer carbon emissions are of course good news for the climate. Eventually, however, this might cause demand for

CERs to fall, as the emissions of industrialised countries are reduced through the recession, rendering it unnecessary to purchase as many CERs as emissions fall with GDP. This could have an impact on the carbon markets in the future and could further depress the carbon price. This in turn might have a detrimental effect on the number and quality of CDM projects.

If there are fewer CDM projects, and those CDM projects that run are less profitable, this will have a detrimental effect on the already poor state of the finances of the adaptation fund. This fund allows the proceeds of the CDM to be used to help developing countries vulnerable to climate change to fund adaptation requirements. It also covers administrative expenses, although there is no priority between these two aims.¹⁴¹ To compensate for this collapse in revenues for the fund, it could be argued that the figure of two per cent of CDM profits that the fund currently receives, should be raised. Using 2007 figures one study estimated that the adaptation fund would raise in the region of \$180 million, assuming a CER price of \$11.45.¹⁴² These 2007 figures may have to be revised down in light of worsening economic sentiment. This arguably optimistic figure of \$180 million contrasts unfavourably with the cost of adaptation mentioned in the Stern Report, which listed the cost of adaptation as one per cent of global GDP.¹⁴³ Clearly under such requirements \$180 million is a paltry amount. Of course, adaptation measures will not just come from this CDM fund and the figure in the Stern Report is a global one, rather than just focusing on developing countries. However, it is clear that the adaptation fund is not close to providing developing countries with adequate funds. This shows that more funds should be provided. The CDM and the adaptation fund are actually just a small piece in the climate change jigsaw and the possibilities for its useful reform and very existence need to be evaluated in this light.

¹³⁶ See Kenber, note 42 above at 282.

¹³⁷ *Id.*

¹³⁸ HM Treasury (U.K. Government), *Budget 2009: Building Britain's Future*, April 2009, at 184.

¹³⁹ For precise growth statistics, see BBC, 'France and Germany exit recession', *BBC News*, 13 August 2009, available at <http://news.bbc.co.uk/1/hi/8198766.stm>; BBC, 'Japan's Economy Leaves Recession', *BBC News*, 17 August 2009, available at <http://news.bbc.co.uk/1/hi/8204075.stm>; BBC, 'US Economy is Growing Once Again', *BBC News*, 29 October 2009, available at <http://news.bbc.co.uk/1/hi/business/8331497.stm> and BBC, 'UK economy emerges from recession', *BBC News* 27 January 2010, available at <http://news.bbc.co.uk/1/hi/business/8479639.stm>.

¹⁴⁰ See Prins et al., note 38 above at 3.

¹⁴¹ See Kyoto Protocol to the United Nations Framework Convention on Climate Change, note 1 above, Article 12(8) and Yamin, note 14 above at 186.

¹⁴² See Boyd et al., note 57 above at 14.

¹⁴³ N. Stern, *Stern Review: The Economics of Climate Change*, HM Treasury and Office of Climate Change, October 2006, page vi.

With lower amounts of investment and perhaps lower CER prices in the coming months and years because of the economic crisis, it could be argued that it would be worth increasing the amount of CER money that gets paid in to the adaptation fund. However this could have the perverse effect of making CDM projects even less profitable in an already harsh economic climate, thereby discouraging investment in CDM projects and CERs. It would make little sense, for example, to increase the figure set aside for the adaptation fund to four per cent, if this resulted in half as many CDM projects taking place because of a squeeze on profits. The already paltry sums in the adaptation fund would probably not be greatly added to by such a policy. In the current climate investors need all the encouragement they can get to invest in CERs, rather than lowering their already reduced profits by increasing adaptation fund contributions. However making funds available for the adaptation fund, or other funds aimed at mitigating climate change and contributing to sustainable development, will be hugely difficult with government budgets already massively stretched. The current financial crisis is likely to have an adverse effect on both CDM projects and the values of CERs generally. This is a further handicap for an already imperfect CDM regime.

It should be noted that pessimism regarding the economy has diminished in recent months, with stock markets around the world rallying.¹⁴⁴ CER prices have continued to increase in the second half of 2009, although the market might be due for a correction over the next few months.¹⁴⁵ However, this merely reflects the fact that the economic situation has gone from bad to less bad. Given some of the apocalyptic predictions during the darkest winter days of 2008, an improvement from that situation is not good, just less bad. Gordon Brown's

Freudian slip that he 'saved the world'¹⁴⁶ is perhaps indicative of the apocalypse aversion goal at the time, which is of course a remarkably low base from which to judge one's progress. The economic recovery will take some time, continuing to have an effect on climate policy. In particular lower carbon prices, despite the recent rise, seem set to stay and the return of well over €20 carbon as in 2008¹⁴⁷ is some way off.

7 CONCLUSION

It is highly unlikely that the CDM can simultaneously contribute to sustainable development and reduce greenhouse gas emissions as it is essentially a market mechanism. This paper has identified problems with the CDM, and alluded to some of its moderate successes. For example, its ability to pick the low lying fruit of easy emission reductions is useful. Considering that the carbon market is still evolving, progress in some respects has been significant. However, some problems surrounding the CDM, particularly the facade of sustainable development, need to be properly addressed. The sustainable development aim of the mechanism has been jettisoned in favour of securing plentiful CERs at the lowest possible cost. This is understandable in the infancy of the CDM. However, for the mechanism to contribute to achieving a lower carbon economy in the long term there must be a greater emphasis on sustainable development. Projects that aid sustainable development and lead to decarbonisation of development pathways are crucial. These are the projects that will ultimately help change long term practice and mitigate climate change.

¹⁴⁴For example the FSTE 100 index has surged from its low of 3512 in March to over 5000 now. This is a rise of over 40 per cent. See 'FTSE 100 Share Price Chart', *Yahoo Finance Website*, 17 September 2009, available at <http://uk.finance.yahoo.com/q/bc?s=^FTSE&t=1y&l=on&z=m&q=l&c=>.

¹⁴⁵Carbon Positive, CER Prices may Falter in Late 2009, 28 August 2009, available at <http://www.carbonpositive.net/viewarticle.aspx?articleID=1654>.

¹⁴⁶David Byers, 'Gordon Brown Left Red-faced in Commons after World Saviour Gaffe', *Times Online*, 10 December 2008, available at <http://www.timesonline.co.uk/tol/news/politics/article5319124.ece>.

¹⁴⁷Carbon Positive, EU Carbon Prices Slip from Highs, 8 July 2008, available at <http://www.carbonpositive.net/viewarticle.aspx?articleID=1183>.

The foregoing analysis suggests that infusing genuine sustainable development objectives into a market mechanism is an impossible task. The CDM is currently pursuing two seemingly mutually exclusive aims. This charade should not continue any longer. The CDM should decide on which side of the fence it lies and should not continue in its current schizophrenic state. If it is a purely market mechanism, as this paper believes it is, this should be explicitly stated and sustainable development pursued by other means. Such a statement might bring into question the mechanism's very existence. This is particularly true if the majority of easy emission reductions have already been made and if the awareness of the climate change regime in developing countries has been raised. In such a case the CDM might have already outlived its usefulness.

In theory another option would be to place more emphasis on sustainable development at the expense of pure market forces. This makes sense as much 'low lying fruit' has already been picked. The decarbonisation of the economy – as encapsulated in admittedly imperfect definitions of 'sustainable development' – should become a progressively higher priority as more of the low fruit comes off the tree. In practice this paper has demonstrated the near-impossibility of this route. In the longer term it is necessary to move beyond emission reductions and towards projects with more sustainable development such as renewable energy projects. Unfortunately the CDM is unlikely to be able to contribute to making this shift. The CDM will not really facilitate sustainable development because sustainable development guidelines and definitions have not yet been agreed.

Market distortions, such as issuing more CERs to projects contributing to sustainable development, could in theory be an option. In practice, such distortions would have to be done very slowly and incrementally, if at all, so as not to erode investor confidence and certainty. This would mean that by the time the market had been reformed, valuable time would have been lost and development pathways would not have been changed. Time is not a commodity which the climate regime has in abundance. Dawdling and failing to change development pathways now would be a fatal mistake. The necessarily incremental nature of market distortion precludes this option from solving the

dilemma of sustainable development in the CDM. Reforming the market should be done swiftly or not at all. As the former is not an option, CDM market reform should not be undertaken at all. The same is true for attempting the monetisation of sustainable development within the CDM. In theory this could be achieved by greater CER issuance to projects with sustainable development or by giving fewer CERs to projects with fewer sustainable development benefits. In practice the chances of achieving an agreement to this effect remain slim. Laborious market reform attempting to reconcile the two irreconcilable principles of the market and sustainable development would almost certainly be a waste of time.

Finally it is worth noting that the CDM should not be seen as a vehicle which can cure all the climate regime's ills. It is just one part of a group of flexibility mechanisms which are part of a wider climate change and development framework. To be sure, some projects might not be suitable for the CDM and should instead look for financing from alternative sources such as foreign direct investment and overseas development assistance. It cannot be the sole responsibility of the CDM, for example, to initiate renewable energy projects in developing countries when factors outside the CDM and indeed outside the climate change regime also have a part to play. The CDM has seemingly demonstrated it is incapable of doing this anyway. The CDM should explicitly acknowledge its sustainable development failings. Admitting its limitations might be the only way of saving the CDM. The policy recommendations mentioned above regarding improving sustainable development in the CDM seem impossible to put into practice. The CDM could perhaps play a useful role in the future, but only in terms of emission reductions. The market mechanism is incapable of meaningfully contributing to sustainable development. The CDM has already raised awareness in developing countries and picked some low lying fruit. Its work is arguably already done, which perhaps spells the beginning of the end of the CDM. Continuing the facade that the CDM contributes to sustainable development when it patently does not is as unsustainable as those carbon-intensive development pathways that the CDM has so unfortunately failed to alter. Sustainable development in the CDM cannot be improved. Arguably its future utility in the climate regime is thereby disproved.

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