# BEYOND KYOTO: INSTRUMENTAL REASON AND ITS CRITIQUE IN THE CONTEXT OF SELECTED INSTRUMENTS AND COMMITMENTS OF THE POST-2012 CLIMATE ARCHITECTURE

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# Abstract

This thesis seeks to analyze the Clean Development Mechanism as one of three Kyoto flexible mechanisms that together with a quantitative binding emission reduction commitment constitute the cornerstone of the Kyoto Protocol to the United Nations Framework Convention on Climate Change, which counts as a backbone of current climate architecture. The goal of this conceptual analysis is to understand why the Clean Development Mechanism has failed so far to a great extent to deliver the positive developmental and environmental effects that it was designed for and why, in some cases it has actually contributed to degradation of environmental or human conditions. The theoretical framework of the analysis draws heavily of Andrew Feenberg's two-level critique of instrumental reason. However, in order to grasp the particularities of environmental problematique more appropriately, Feenebrg's critique has been expanded and layered with insights from the Green Political Theory and Social Constructivist Studies in Science and Technology. Following this layered and expanded theoretical framework, the thesis offers three possible answers and outlines solutions that may help to address the Clean Development Mechanism's goals better in the post-2012 climate architecture.

# Table of Contents

# Introduction

The phenomenon of global warming as one of the most severe cases of environmental degradation worldwide has received an enormous amount of attention of both academics and practicians in many fields in last years. As the causes and effects of this phenomenon are not confined to national level,[1] global warming has naturally become a matter of concern in International Relations Theory as well. However, a critique has been raised that the mainstream International Relations Theory (IR Theory) with its positivist epistemological assumptions and methodological tools is not able to reflect fully and deal adequately with the challenges of global environmental changes such as global warming.[2] When treating environmental issues merely as collective action problems in the framework of regime theory (liberal tradition) or in terms of scarcity of resources, environmental conflicts and population imbalances (realist tradition) at the interstate level, the mainstream IR Theory overlooks a more fundamental political, normative, historical and philosophical aspects that drive and dynamize the whole process of environmental degradation in general and the phenomenon of global warming in particular. Subsequently, this omission prevents the mainstream IR Theory from delivering normative reflections on these issues as a basis for political action that could enhance conditions of both humans and nature.[3]



This lack of Political Theory in the IR theorizing has been addressed, among others, by Robert W. Cox who has introduced distinction between problem solving theory (which in the context of IR theorizing refers to the mainstream IR Theory) and critical theory (which in the context of IR theorizing belongs to wider International Political Theory). International

[1] Eivind Hovden, "As if Nature Doesn't Matter: Ecology, Regime Theory and International Relations," *Environmental Politics* 8, No. 2 (1999): 51.
[2] Matthew Paterson, "Interpreting Trends in Global Environmental Governance," *International Affiairs* 75, No. 3 (1995): 794.
[3] Laferriere, Eric, "Emancipating International Relations Theory: An Ecological Perspective," *Millenium* 25, No. 1 (1996): 53.

Political Theory has been further developed by Richard K. Ashley who, by bringing in Jürgen Habermas's concept of three cognitive interests, enriched the critical IR thinking with insights from the Critical Theory as originally established by Frankfurt School and later refined by Habermas. Since man's relationship to nature has always been an important issue for the Frankfurt School and its adherents,[4] Ashley's "opening" of IR theorizing to Critical Theory has equipped International Political Theory with concepts and methods that allow normative reflection on environmental issues. Moreover these reflections are compatible to a great extent with insights of Green Political Theory and Social Constructivist Studies in Science and Technology which paves the way to the construction of a robust and coherent critical framework[5] within the IR theorizing. When properly built, this framework has the potential to serve the purposes of both the Green Political Theory (resolution of environmental crisis)[6] and Critical Theory (defense of human freedom)[7] and as such can be understood as a useful tool to enhance our understanding of environmental crisis in the context of international relations.

As both Critical Theory and Green Political Theory converge substantially around critique of modernity and critique of instrumental reason in particular, these critiques may serve as a basis for the desired framework. In fact such a framework has already been constructed by Andrew Feenberg.[8] However, Feenberg's theory needs to be layered more consistently with some insights of Green Political Theory and Social Constructivist Studies in Science and Technology, in order to be able to reflect both the negative social and negative environmental effects of an unconstrained employment of instrumentality. The aim

[4] C. Fred Alford, Science and the Revenge of Nature (Gainesville: University of Florida Press, 1985), 1.
[5] Laferriere, Eric, "Emancipating International Relations Theory: An Ecological Perspective," *Millenium* 25, No. 1 (1996): 53.
[6] Eivind Hovden, "As if Nature Doesn't Matter: Ecology, Regime Theory and International Relations," *Environmental Politics* 8, No. 2 (1999): 50.
[7] Laferriere, Eric, "Emancipating International Relations Theory: An Ecological Perspective," *Millenium* 25, No. 1 (1996): 53.
[8] Anderw Feenberg: "Marcuse or Habermas: Two Critiques of Technology," Inquiry 39, (1996): 45-70.

of this thesis is to blend Feenberg's two-level critique of instrumental reason with Green Political Theory and to expand on it by outlining three possible answers and solutions to it and using some insights from Social Constructivist Studies in Science and Technology. Instrumentality - as a key feature of modernity - refers here to "first, an exclusive focus on the rationality of means – techniques for attaining a given objective in the most 'efficient' manner – and, second, the explicit or implicit judgment that ends are matter of subjective or arbitrary preference."[9] The three answers and solutions to Feenberg's critique - optimistic, pessimistic and reformist view on instrumental reason - cover three main stances toward instrumentality that can be found in the literature on Green Political Theory and Critical Theory, where the reformist view represents the most compromising stance able to accommodate the broadest spectrum of critical and green political theorists.

Subsequently, within the above outlined framework, the thesis seeks to analyze one particular feature of current international climate architecture – the Clean Developed Mechanism (CDM). The CDM is one of three Kyoto flexible mechanisms that together with a quantitative binding emission reduction commitment constitute the cornerstone of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC), which counts as a backbone of current climate architecture. The CDM is a market based administrative instrument designed in accord with the instrumental logic to support clean technology transfer to developing countries and to facilitate a cost-effective compliance with Kyoto's emission reduction targets. It has been widely contested, especially by the proponents of environmental justice but also by some lawyers, natural scientists and economists.[10]



[9] William Leiss, "Ideology and Scince," *Social Studies of Science* 5, No. 2 (1975): 194.
[10] Graham Erion, Low Hanging Fruit Always Rots First: Observations from South Africa's Crony Carbon Market, University of KwaZulu-Natal, Durban, South Africa 2005, p 13.

The goal of the analysis is to understand why the Clean Development Mechanism has (so far) failed to a great extent to deliver the positive developmental and environmental effects that it was designed for and why, in some cases it has actually contributed to degradation of environmental or human conditions. Following the theoretical framework, the thesis offers three possible answers and outlines solutions that may help to address the CDM's goals better in the post-2012 climate architecture. The first answer, given by proponents of the optimistic view argues that the CDM has failed simply because no enough instrumental reason has been employed to design it. The second answer, given by the proponents of reformist view, claims that even when designed more sophistically (as the optimists would propose), the CDM will inevitably fail to deliver the results as long as the instrumental logic behind the CDM design and behind technology in general remains biased (environmentally and socially indifferent).[11] The last, pessimist answer sees CDM as essentially and inevitably wrong and unable to deliver any positive environmental or social effects.

As far as the structure of the thesis is concerned, the first chapter will give a brief introduction to the current international climate architecture constituted largely by the UNFCCC and its Kyoto Protocol. The chapter will also explain the reasons why the current international climate architecture is being renegotiated and it will also briefly sketch key negotiation areas and possible features of the new, post-2012 climate architecture, focusing primarily on the issues related to the CDM. In the second chapter, I will discuss the concept



[11] Nowadays the main driving force behind the CDM operation are transnational corporations who propose their CDM projects to CDM Executive Board under the auspices of the UNFCCC. As the project criteria are defined rather vaguely and broadly, corporations (socially and environmentally indifferent) - in accord with their instrumental logic – often offer rather cheap environmental and technical solutions than genuine social, technical or environmental assistance for developing countries in order to gain some emission credits. The critics use to refer to this phenomenon as to the new "CO2lonization." This will be discussed in a more depth in the fourth chapter.

of instrumental reason within the IR theorizing and then continue to outline Feenberg's two-level critique of instrumental reason and layer it with insights of Green Political Theory. In the third chapter I will introduce a theoretical framework that builds on the layered Feenberg's two-level critique as outlined in the previous chapter and that offers an optimist, pessimist and reformist answer and solutions to his two-level critique. Here I will back up the reformist answer with some insights from Social Constructivist Studies in Science and Technology. The fourth chapter - the empirical part of the thesis- will analyze the CDM and its possible future design in the light of the theoretical framework proposed in the second and third chapter.

# Chapter 1: Current and Post-2012 Climate Architecture

In order to understand better the overall context of the Clean Development Mechanism that will be analyzed in this thesis, this chapter gives a brief introduction to both the current and the future international climate architecture.

The alarming findings of the Fourth Assessment Report of the United Nations Intergovernmental Panel on Climate Change released in February 2007 represent one of the latest warnings of worldwide scientific community that have highlighted the necessity of careful international climate change management.

The Assessment Report has confirmed that the warming of Earth's climate system is unequivocal, affects many natural systems and that with a very high probability it has been induced by human activities. At the same time the report points out to the fact that current mitigation policies and development practices are insufficient and may lead to climate change that would, in the long term, "be likely to exceed the capacity of natural, managed and human systems to adapt."[12] The Assessment Report also confirms that mitigation options that can reduce, delay or avoid many negative effects of global warming are available; however they need to be applied promptly and accompanied by substantive research and development in new environmental technologies, sustainable development and by congruent macro- economic and other policies.[13] These findings are particularly relevant in the context of new international negotiations under the auspices of the United Nations launched in Bali in 2007 that are aimed at setting new commitments for the future international climate architecture and at revising instruments of the current one.



[12] Climate Change 2007: Synthesis Report. An Assessment of the Intergovernmental Panel on Climate Change.
[13] Ibid, p.73

Current international climate architecture is built to a great extent on the instruments and commitments articulated in the United Nations Framework Convention on Climate Change (UNFCCC)[14] and in its widely discussed protocol - the Kyoto Protocol. The Convention was signed on the Earth Summit - United Nations Conference on Environment and Development in Rio de Janeiro in 1992 and the Protocol was agreed on in Kyoto five years later.

The main objective of the Framework Convention is to achieve a long-term "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."[15] The Convention also designates developed countries to take the lead in this process in accord with the principle of 'common, but differentiated responsibilities' of both developed and developing countries.[16] However, the Framework Convention does not set any near-term binding quantitative emission targets for industrialized countries. These were introduced only with the Kyoto Protocol to the UNFCCC that was agreed on in 1997 and that, despite the US rejection, entered in force in 2005 after Russia's ratification.[17]

The key commitment of the Protocol, as articulated in Article 3, binds developed countries to reduce their emissions of greenhouse gases "by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012"[18] These targets can met by applying a wide array of policies and measures[19]. Cost-effective compliance with the commitment and employment of the defined policies and measures should be facilitated by three market-based



[14] United Nations Framework Convention on Climate Change.
[15] Ibid, Article 2
[16] Ibid, Article 2
[17] Joseph Adly and Robert N. Stavins, "Climate Policy Architectures for the Post-Kyoto World." *Environment* 50, No. 3 (2008): 8.
[18] Kyoto Protocol to the United Nations Framework Convention on Climate Change. Article 3.
[19] As specified in the Article 2 of the Protocol.

mechanisms, the so called Kyoto flexible mechanisms: (1) emission trading, (2) joint implementation and (3) clean development mechanism. These, together with the key commitment, represent cornerstone of the Protocol.

The flexible mechanisms have been designed to advance cheap compliance by allowing the Annex I countries[20] to depart from their original nation commitments and gaining additional emission credits[21] by buying them on the emission market (emission trading), investing in emission reduction project in other Annex I[22] country (joint implementation) or by investing in emission reduction in other non-Annex I country (clean development mechanism).

The Kyoto provisions, especially those regarding the flexible mechanisms have been further specified during the 7th Conference of the Parties to the Protocol (COP 7) in Marrakech in 2001, where the Marrakech Accords and Marrakech Declaration were accepted.

Kyoto Protocol and Marrakech Accords thus build a general framework for the operation of flexible mechanisms. This framework is still being refined and further adjustments need to be made in order to ensure its efficacy. Moreover, the first commitment period ends in 2012 and new UNFCCC negotiations have been launched in Bali in December 2007 in order to settle the post-2012 arrangement. This may serve as an opportunity to improve the mechanisms, to rethink challenges that they pose and eventually to come up with new instruments to support and supplement the original flexible

[20] Developed countries with binding emission targets within the framework of the Protocol (Annex B countries in the UNFCCC) - developing countries do not have any binding targets within the Protocol
[21] Extra emission credits that allow the country to emit more than is calculated as the ceiling for national emission according to the key commitment
[22] The emission reduction will be thus ascribed to the investing country, not to the host country

mechanisms. As put by Joseph Adly and Robert N. Stavins, "the next step in building international climate policy should be broader than the Kyoto Protocol, both in terms of the number of countries with obligations and perhaps the suite of policies to be employed."[23] However, it is clear, that a radical departure from the policies embodied in flexible mechanisms is quite unlikely. Out of the current flexible mechanisms, at least the CDM and emission trading will be surely carried over into the future climate architecture, mainly because of 'tremendous interest' of stakeholders, including the private sector that has been demonstrated during the Bali Conference. Moreover, substantive personal and institutional background has been created around the mechanisms so far.[24]

Bali Conference has resulted in adopting the so called Bali Road Map – a set of guidelines paving the way for arriving at a new climate change agreement by 2009 at the UNFCCC Conference in Copenhagen. Though Bali has not brought any concrete commitments in terms of new, harder, quantified and binding CO2 emissions limits for both developed and developing countries, it has delivered three important results that will be crucial for the Post-2012 Climate Architecture. First, following pillars of the future agenda have been defined: mitigation (reduction of emissions), adaptation on climate change consequences, technology transfer to developing countries and financing. Second, the USA as one of the biggest polluters without binding emission reduction targets has committed itself to the roadmap and hence to participation on the post-2012 climate architecture negotiations. Third, the roadmap implies heading towards much harder and long term emissions reductions in the post-2012 period. [25] Originally, the EU wanted to achieve some explicit formulation of tough preliminary targets (the EU proposal for developed countries was to reduce emissions



[23] Joseph Adly and Robert N. Stavins, "Climate Policy Architectures for the Post-Kyoto World." *Environment* 50, No. 3 (2008): 16.
[24] Raymond Clémençon, 'The Bali Road Map: A First Step on the Difficult Journey to a Post-Kyoto Protocol Agreement,' The Journal of Environment Development 17, no. 1 (2008): 91.
[25] Ibid, 71.

by 30% by 2020 and by 60-80% by 2050 compared with 1990 levels in order to limit global warming to 2ºC above the pre-industrial temperature)[26] in the preamble of the Bali outcome. This was strongly opposed by the USA. In the end the EU managed to include at least a special footnote that cites findings of the 4th IPCC Report about the necessary steps that should be taken in order to keep the global warming at maximum 2ºC above the pre-industrial temperature.[27] In addition to these achievements of the Bali Conference, developing countries have sent out a clear signal that they are ready to negotiate about binding emission commitments on their part, as put by a representative from South Africa right on the spot in Bali: "developing countries are saying voluntarily that we are willing to commit ourselves to measurable, reportable and verifiable mitigation actions. It has never happened before. A year ago, it was totally unthinkable."[28]



[26] Climate change: Bali conference must launch negotiations and fix 'roadmap' for new UN agreement, Brussels, 27 November 2007, IP/07/1773.
[27] Raymond Clémençon, 'The Bali Road Map: A First Step on the Difficult Journey to a Post-Kyoto Protocol Agreement,' The Journal of Environment Development 17, no. 1 (2008): 75.
[28] Benito Müller, "Bali 2007: On the Road Again! Impressions from the Thirteen UN Climate Change Conference," January 2008.

# Chapter 2: Instrumental Reason and Its Critique

In this chapter, I will first discuss the concept of instrumental reason within the general IR theorizing in order to justify, why the framework I have chosen is the most suitable one for my analysis. of. Then I will introduce Feenberg's two-level critique of instrumental reason and I will layer it with insights of Green Political Theory and Social Constructivist Studies in Science and Technology in order to adjust it for an analysis of both the environmental and the social problematique.

## *2.1 Instrumental Reason and IR Theory*

As outlined in the introduction, the mainstream IR theory, which treats environmental issues merely in terms of interstate cooperation and conflict in a positivist manner seems to be ill equipped to capture the uniqueness of the challenge posed by global warming and other global environmental issues that, according to Steven Bernstein, have the potential to "transform substantially the nature of global politics and society."[29] Eivind Hovden claims that this deficiency of mainstream IR Theory has both analytical and political consequences. On a general analytical level the IR approach - thanks to its positivist epistemology - tends to overlook the "specifically modern character of environmental degradation"[30] (modern in terms of values, norms and philosophy). Mathew Paterson adds that on a level of empirical analysis the mainstream IR theory then fails to deal appropriately with emerging patterns global environmental governance that "break down the traditional dominance of states in such matters and presage alternative forms of global politics."[31] Moreover, these new



[29] Steven Bernstein, *The Compromise of Liberal Environmentalism* ( New York: Columbia University Press, 2001), 1.
[30] Eivind Hovden, "As if Nature Doesn't Matter: Ecology, Regime Theory and International Relations," *Environmental Politics* 8, No. 2 (1999): 60.
[31] Matthew Paterson, "Interpreting Trends in Global Environmental Governance," *International Affairs* 75, No. 3 (1995): 794-795.

patterns of global environmental governance often have, according to some critical views,[32] quite inverse effects and are "highly damaging both ecologically and socially."[33] This mainstream IR Theory's ignorance has also certain political consequences - it leads to perpetuating the status quo, which is "unnecessary, short-sightened and detrimental."[34]

After having identified the main problems of the mainstream IR Theory when dealing with environmental issues such as global warning, an alternative approach that questions and supplants mainstream's positivist approach (supposed value-neutrality, interest in narrow instrumentality and context-indifference) is offered by the International Political Theory and more specifically by critical theory as it was introduced by Cox. Cox explains that critical theory

> is critical in the sense that it stands apart from the prevailing order of the world and asks how that order came about. Critical theory, unlike problem solving theory, does not take institutions and social and power relations for granted but calls them into question by concerning itself with their origins and how and whether they might be in the process of changing.[35]

Cox also argues that precisely by the virtue of accepting the prevailing order, by virtue of operating within this order, problem solving theory – the IT Theory in context of IR theorizing - becomes biased in favor of the order. In contrast, critical theory performs a conscious valuative choice toward a different possible order[36] and hence is better tailored to handle to global environmental issues in both analytical and political sense.



[32] Ruth Irwin, Pratap Chatterjee and Matthias Finger for example
[33] Matthew Paterson, "Interpreting Trends in Global Environmental Governance," *International Affiairs* 75, No. 3 (1995): 794-797.
[34] Ruth Irwin, "The Neoliberal State, Environmental Pragmatism and its Discontents," *Environmental Politics* 16, No. 4 (2007): 643.
[35] Robert W. Cox, "Social Forces, States and World Orders: Beyond International Relations Theory," in *Neorealism and Its Critics*, ed. Robert Keohane (New York: Columbia University Press, 1986), 208-209.
[36] Ibid, p.209-210.

A further important step in development of International Political Theory in terms of its ability to deal with environmental issues in an innovative way has been taken by Ashley, who has introduced Habermas's vocabulary of three cognitive interests into IR theorizing.[37] According to Habermas, human constitution of knowledge is guided by technical, practical and emancipatory cognitive interests. Technical interest (or instrumental reason) is interest in such kind of knowledge that would empower man and facilitate his mastery over an objectified environment. Practical interest is aimed at such kind of knowledge that enhances intersubjective understanding, communication and thus is able to sustain social order. Both technical and practical interest produce the kind of knowledge that is characteristic for a problem solving theory: knowledge designed to survive in and sustain the prevailing order.[38] In contrast, the emancipatory interest is "rooted in the human capacities for the communicative exercise of reflective reason in light of needs, knowledge and rules"[39] and as such lays the heart of all critically oriented sciences. Having this interest, humans seek the kind of knowledge that would facilitate their autonomous self conscious and self formative development.[40]

Ashley's portrait of International Political Theory as a critical theory with emancipatory cognitive interest then invites us to examine and criticize, in line with the tradition of the Frankfurt School and later Habermas, the normative, valuative and philosophical foundations of an order which gave birth and subsequently has aggravated[41] global environmental crisis such as global warming. As suggested by Hovden, the order we



[37] Richard K. Ashley, "Politcal Realism and Human Interests," *International Studies Quarterly* 25, No. 2(1981): 208.
[38] Jürgen Habermas, Knowledge and Human Interest. In: Richard K. Ashley, "Politcal Realism and Human Interests," *International Studies Quarterly* 25, No. 2(1981): 208.
[39] Ibid, p. 208.
[40] Ibid, p.208.
[41] In an attempt to mend it via international environmental regimes and due to ignorance of 'emerging patterns of global environmental governance,' (both embedded in framework of modern science, technology and neoliebral economy)

are referring here to is modern order – the project of modernity initiated during Enlightenment.[42] Further, when interested specifically in environmental issues, the most logical option is to focus on critique of instrumental reason embodied in modern science and technology, market and administration that mediate relationship between modern man and nature and well as modern social relations.

## *2.2 Two-Level Critique of Instrumental Reason*

The critique of instrumental reason as outlined above is not unique to the tradition of Critical Theory. It is widely compatible with the insights of Green Political Theory and Social Constructivist Studies in Science and Technology. A critical framework potentially suitable for delivering critical insights on environmental crisis in the context of international relations that goes beyond the possibilities of mainstream IR Theory has been developed by Andrew Feenberg, a student of Herbert Marcuse, in his two level critique of instrumental reason.

Feenberg, building on Habermas's media theory argues that instrumental reason in modern societies is employed to coordinate success-oriented behavior of individuals in pursuit of their interests via three modern media: technology, administration (political power) and market (money). As put by Feenberg:

> Together, money and power [and technology] "delinguistify" social life by organizing interaction through objectifying behaviors. Common understandings and shared values play a diminished role on a market, because the market mechanism yields a mutually satisfactory result without discussion. Something similar goes on with the exercise of administrative power [and technology]. Media-related communication…consists in highly simplified codes and stereotyped utterances or symbols which aim not at mutual understanding but at successful performance. Action coordination is an effect of the structure of the mediation rather than a conscious intention of the subjects.[43]



[42] Eivind Hovden, "As if Nature Doesn't Matter: Ecology, Regime Theory and International Relations," *Environmental Politics* 8, No. 2 (1999): 56.
[43] Anderw Feenebrg: "Marcuse or Habermas: Two Critiques of Technology," Inquiry 39, 1996, pp. 45-70.

This type of interaction between individuals can be understood as an alternative to a more traditional social coordination of individual behavior through "communicative understanding, through arriving at shared beliefs in the course of linguistically mediated exchanges,"[44] - or to put it more simply - through everyday communicative interactions. Ideally, both types of human interaction - the mediated one (or the system) and communicative one (or the life world) - should be balanced in society.

Both Habermas and Feenberg argue that what modern societies are experiencing now is a shift of an emphasis from the lifeworld (everyday communicative interactions) to the system (market, administration and technology governed by instrumental reason). This shift of emphasis - 'colonization of the lifeworld by the system' or 'technicization of the lifeworld'[45]- can potentially bring about a number of negative social effects. In some spheres the system (instrumental reason of market, administration and technology) is appropriate - useful, productive and effective. However, there are spheres of lifeworld that should preserve their communicative quality and resist subordination to mere instrumentality in order to avoid dangerous pathologies.[46] 'Inappropriate colonization' here refers to the process in which more and more social issues[47] are being treated as technical questions that need to be solved by qualified experts[48] in an 'objectifying manner' rather than being treated as questions of a good life, questions about values. As summed up by Robyn Eckersley, "the result is that the achievement of a rational, democratic consensus by an informed citizenry



[44] Anderw Feenberg: "Marcuse or Habermas: Two Critiques of Technology," Inquiry 39, 1996, pp. 45-70.
[45] Ibid
[46] Feenberg gives an example of breast feeding in 1930s and 1940s: "Consider, for example, the medical offensive against breast feeding in the 1930s and '40s. In this instance, an aspect of family life was technologized in the mistaken belief that formula was healthier than breast milk. This technical mediation complicated infant care unnecessarily while opening huge markets. The widespread use of formula in countries without pure water supplies spread infant diarrhea which in turn required medical treatment, further intruding technology on infant care. This is a clearly pathological intervention of technology into the lifeworld."
Anderw Feenberg: "Marcuse or Habermas: Two Critiques of Technology," Inquiry 39, 1996, pp. 45-70.
[47] And environmental issues as well as will be demonstrated later in this chapter
[48] Economists, political and social scientists, natural scientists, engineers

concerning societal goals is being increasingly subverted by technical discussion by a minority of experts concerning means,"[49] supposing that the societal goals (economic growth through market, enhancement of bureaucracy in administration and domination of nature in the realm of technology) are unproblematic and thus out of discussion.

Expanding Habermas, Feenberg proposes that it is not only the colonization of the lifeworld that should be guarded in order to prevent defects of modernity. Unlike Habermas, Feenberg sees the pathologic potential also within the system itself. Even in the spheres, where the instrumental reason of market, administration and technology generally delivers the desired results - effectiveness, productivity, utility,[50] it simultaneously brings along some inevitable pathologies. This is because the design of the media (market, administration and technology driven by instrumental reason) is dictated by the interests of the society they serve.[51]As explained by Feenberg:

> Markets, administrations, technical devices have…an *implementation bias*: the form in which they are realized embodies specific valuative choices. These designed-in biases leave a mark on the media, even in those domains where they appropriately regulate affairs. Therefore, critique must not cease at the boundary of the system but must extend deep inside it. [52]

In other words, Feenberg suggests that market, administrative and technical mechanisms are not mere value-neutral objective means that can be used to arrive at any end that we wish to employ them for. In their own design, they are value-biased and thanks to this bias they are simply not able to conceive every or any pre-defined end that we decide to



[49] Robyn Eckersley, "Habermas and Green Political Thought: Two Roads Diverging," Theory and Society 19, No. 6 (1990): 744.
[50] Or, as William Leiss would put it, these are the spheres, where the system brings results to a great extend - where it successfully transform the dangerous and irrational life world to our benefit.
William Leiss, 'Modern Science, Enlightenment and the Domination of Nature: No Exit?
[51] Anderw Feenberg: "Marcuse or Habermas: Two Critiques of Technology," Inquiry 39, (1996): 45-70.
[52] Ibid

use them for. By virtue of their value-ladeness, they will be successful only in conceiving those ends that are congruent with (or at least not contradictive to) their internal bias.

To sum it up in a more schematic view, Feenberg's first-level critique of instrumentality aims at 'colonization of the lifeworld' in cases where the 'brute mediation' or instrumentality phases out the democratic and free (undistorted) discussion about societal goals.[53] The second-level critique of instrumentality aims at situations where the societal goals have been decided on in an appropriate process of free and democratic discussion. After the choice of societal goal has been made in this manner, the problem with realization of this choice arises. Feenberg argues that even if intended to be realized in a value free manner (through supposedly impersonal and instrumental mediation of market, administration and technology), value-bias cannot be avoided.

Regardless of the level of distorted usage of instrumentality (inappropriate colonization of the lifeworld or implementation bias) both levels bring negative *social effects* that have been widely discussed in the literature.

## *2.3 Insights of Green Political Theory*

Feenberg's two-level critique, when applied in the context of global environmental issues, will target the type of global environmental governance that can be characterized by environmental pragmatism, neoliberal economy, techno-progressivism and liberal institutionalism. Current climate architecture, especially the Kyoto flexible mechanisms, including the CDM can be understood as precisely this kind of global environmental governance. As Steven Bernstein puts it, "the Kyoto Protocol is the most ambitious attempt

[53] Assuming, that this discussion is unnecessary and already solved. In this case, the societal goals are out of question, and in order to avoid their critical examination, they are often framed by elites as 'normal' or 'inevitable,' though in fact in many cases they merely reflect the elites' specific valuative choices.

to date to implement market and other economic mechanisms at the global level."[54] This kind of global environmental governance is widely criticized by proponents of transnational grassroots movements and environmental justice movements as well as scholars such as Ruth Irwin, Pratap Chatterjee and Matthias Finger for example. Concrete examples of negative effects of this kind of environmental governance, will be discussed in the fourth chapter, when analyzing effects of the CDM in the context of current and post-2012 climate architecture.

On an abstract level, Feenberg's two-level critique is suitable to reflect both negative social and negative environmental effects brought about by the distorted usage of instrumentality, only after it is layered by the insights of Green Political Theory and later by the insights of Social Constructivist Studies in Science and Technology.

As far as the Green Political Theory is concerned, the crucial move here is an extension of the concept of lifeworld, so that it encompasses not only the unmediated communicative interaction between humans but also unmediated interaction between humans and nature. This unmediated interaction can be understood as an interaction where the nature is not treated in a purely instrumental manner, but as having intrinsic value of its own. Hence, when subsequently applying Feenberg's two-level critique, we can argue that there are areas, where the mediated (instrumental) interaction between man and nature brings about environmental pathologies. Though sometimes the mediated (instrumental) attitude towards nature is appropriate, inevitable and harmless, at the same time the growing evidence of environmental degradation clearly points to the areas where this is not the case.[55]

[54] Steven Bernstein, The Compromise of Liberal Environmentalism ( New York: Columbia University Press, 2001), 118.

[55] Eckersley argues that the detrimental effects of 'over-confident' and unconstrained application of instrumental reason in our relationship to nature have their roots in the ignorance of the complex, intricate and never fully

In addition, in order to gain some more political momentum for their interest in nature preservation, the proponents of Green Political Theory argue that it is not solely the environment that is harmed by unconstrained instrumental attitude towards nature. Following the tradition of the early Frankfurt School,[56] the green political theorists like Brian Easlea claim that the instrumental attitude towards external nature poses a danger of extending the instrumental attitude towards inner nature - body and mind of man himself (the inner nature would then be conceived as a stock of usable raw material at our disposal).[57] This, besides pointing to the undesirability of environmental degradation per se, is another argument in favor of granting nature some kind of intrinsic value[58] what leads to careful consideration or in some cases even restriction of a mere instrumental treatment of nature.[59]

Feenberg, picking up the threads of Green Political Theory and trying to position the environmental values within his two-level critique of instrumentality argues, that first, the unquestioned colonization of the 'natural lifeworld' (meaning human mastery of nature through the instrumental reason of market, administration and technology) stems from the fact that the market, administrative and technological principles of our civilization were built by 'people indifferent to the environment.'[60] Their valuative choice, which was not in



recognizable relations within and between ecosystems and in the ignorance of systemic qualities of natural environment.
Robyn Eckersley,"Habermas and Green Political Thought: Two Roads Diverging,"Theory and Society 19, No. 6 (1990): 754.

[56] Especially Max Horhheimer and Theodore Adorno in *Dialectic of Enlightenment* and Herbert Marcuse in *One-Dimensional Man*

[57] Brian Easlea, "Who Needs the Liberation of Nature?" *Science Studies* 4, No. 1 (1974): 88.

[58] This intrinsic value of nature will mean a new image and new interest in nature derived from the intrinsic value of humans on one hand and the complex and systemic quality of nature on the other hand.

[59] Robyn Eckersley, "Habermas and Green Political Thought: Two Roads Diverging," Theory and Society 19, No. 6 (1990): 744.

[60] Andrew Feenberg, "Values and the Environment," Selected Talks. Simon Fraser University, Canada.

question at the beginning of the era of modernization, was the choice to treat the nature in a merely instrumental manner.[61]

At the second level of his critique of instrumentality Feenberg subsequently points out the fact that any attempts to accommodate environmental values (the intrinsic value of nature for example) within these market, administrative and technological principles are biasedly viewed as additional costs that the society must/should bear. As environmental values have not included in the original technical disciplines, market and administrative design, any attempts to include them now are viewed as an additional socioeconomic burden. This view then hinders and contradicts environmental protection by highlighting the tradeoff between economic, political and technological values (that are largely identified with human safety, well-being and development) and environmental values.[62] Hence, even when the system concentrates its effort on combating environmental degradation, it faces considerable obstacles because these environmental values are simply not congruent, or, in some cases they are outright contradicting to the values that stood at the birth of the system.

At this point the question of character and origins of the implementation bias of instrumental reason arises: Are the hierarchies inherent in the logic of instrumental reason or does the implementation bias consists simply in existing hierarchies misusing originally value-free instrumental reason? Is there something inherently biased about instrumental



[61] We could say that his was conceived as being 'normal' of 'inevitable' in order transform the dangerous and irrational life world to human benefit. This, in turn has lead to an 'overextended' application of media in the lifeworld, which, according the green political theory should be limited by a new valuative choice – the choice to grant the nature intrinsic value in certain areas.

[62] Feenberg then goes on with an argument invalidating this trade off logic. He argues that given the current conditions of environmental degradation and given the new holistic view of man-nature relationship, the whole trade-off logic loses its relevance; it ceases to be a 'lived option' for us. To make the argument clearer, he gives a rather eccentric parallel: "Few of us would consider our failure to earn income through prostitution as a trade-off of moral principles for money for the simple reason that this is not a live option for us. Similarly, well established environmental and safety standards are not up for grabs and their theoretical cost is irrelevant to present concerns."
Andrew Feenberg, "Values and the Environment," Selected Talks. Simon Fraser University, Canada.

reason? Or is does the potential for 'dominating the man' through the scientific and technological mastery of nature stems merely from the "social misuse" of the knowledge gathered by value-neutral instrumental reason?

Potential of 'social misuse' of the knowledge gathered by instrumental reason is quite clear even on an intuitive level, without performing much analytical exercise. As put bby Horkheimer and Adorno: "the power of the system over human beings increases with every step they take away from the power of nature."[63] This enhanced control - even when decided on in a more or less free, undistorted and democratic discussion ( hence when falling out of Feenberg's first level critique of colonization of the lifeworld) and when intended to be used for the benefit of the whole society - is nevertheless tempting and prone to misuse (either by irrational social forces or by in a sense rational pursue of individual interests of ruling elites).

Questions about inherent (or unavoidable) implementation bias of instrumental reason as employed by modern media are a bit more complex. The diversity of views on this problem will be discussed in the next chapter, now only a general thrust of the 'inherent-bias-argument' will be presented.

The 'inherent-bias' argument, as expressed by Green Political Theory (together with Marxists and feminists) points out to the fact that "modern technological rationality exhibits fundamental deficiencies in its handling of labor, gender, and nature."[64]

The suggestion here is that it is not merely the 'value-neutral system' being 'socially misused' in the course of its implementation that is problematic. Yet another kind of

[63] Max Horkheimer and Theodore Adorno, *Dialectic of Enlightenment,* (London: Allen Lane, 1973).
[64] Anderw Feenebrg: "Marcuse or Habermas: Two Critiques of Technology," Inquiry 39, 1996, pp. 45-70.

'implementation-bias' problem lies within the system (be it market, administration or technology) itself. In order to 'be good', to deliver the results, to deliver the order, it needs hierarchies and domination; it needs some values to be more important than others.

Feenberg elaborates on this point, giving the example of technology.[65] He explains that media principles in general - and in Feenberg's particular example specifically technological principles - indeed can be formulated in a value-free manner, objectively, outside of any content and free from any interest or ideology. However, as such these principles are mere abstractions. In other words, what William Leiss calls 'pure understanding of matter as energy transformation and the laws of nature, which have a universal character'[66] could indeed be understood as being non-violent, non-hierarchical, non-dominant (non-social, neutral, and formal). However, as soon as these principles take concrete shape in concrete scientific or technological decisions within certain socioeconomic structure, they cease to be universal. The process of realization of these principles is the process of filling them with values.[67] Of particular relevance here is the argument, that this process of realization of abstract universal principles is not a mere contextualization of otherwise neutral principles. With their realization, these neutral principles 'lose' their neutrality. The values of socioeconomic settings within which they have been realized become *integral* to them. Hence, it is not about an encounter of universal principle with

[65] Anderw Feenebrg: "Marcuse or Habermas: Two Critiques of Technology," Inquiry 39, 1996, pp. 45-70.
[66] William Leiss, 'Modern Science, Enlightenment and the Domination of Nature: No Exit?
[67] Feenberg than gives and example of efficiency as one of such core principles of instrumental reason as applied in science and technology: "Efficiency, to take a particularly important example, is defined formally as the ratio of inputs to outputs. This definition would apply in a communist or a capitalist society, or even in an Amazonian tribe. However, concretely, when one actually gets down to the business of applying the notion of efficiency, one must decide what kinds of things are possible inputs and outputs, who can offer and who acquire them and on what terms, what counts as waste and hazards, and so on. These are all socially specific, and so, therefore, is the concept of efficiency in any actual application. As a general rule, formally rational systems must be practically contextualized in order to be used at all. This is not merely a matter of classifying particular social contents under universal forms, but involves the very definition of those forms which, as soon as they are contextualized in a capitalist society, incorporate capitalist values."
Anderw Feenebrg: "Marcuse or Habermas: Two Critiques of Technology," Inquiry 39, 1996, pp. 45-70.

external values,[68] the problem resides in the fact that in the realization of the principle itself, the external value becomes internalized and *essential* for the performance of the principle. Feenberg then clarifies this essentiality by pointing out on how Christian, masculine or capitalist values[69] are integral (inherent) to the project of modernity. Without these values, the performance of the whole modern system would be unthinkable, or, at least the system would probably have taken a dramatically different shape.



[68] what may result in 'social misuse' of these principles. However, according to Leiss, Habermas and other opponents of 'inherent-violence-of-reason' perspective, this kind of misuse then would be entirely social problem - a problem of imperfect, irrational (=not rational enough) social organization. This situation then requires rather even 'more reason' than critique or subsequent retreat from reason. This will be discussed in the next chapter, when dealing with reactions on Feenberg's two level critique of instrumentality.

[69] embodying domination of nature, women and labor

# Chapter 3: Three Answers to Feenberg's Two Level Critique of Instrumental Reason

Feenberg's two-level critique of instrumental reason blended with Green Political Theory as presented above can basically provoke three answers and solutions: optimistic, pessimistic and reformist, where the reformist view represents the most compromising stance able to accommodate the broadest spectrum of critical and green political theorists. This chapter discusses there three answers on a theoretical level, so that they can applied on an empirical case of CDM in the next chapter. The insights of Social Constructivist studies are applied to back up the reformist view.

## *3.1 Optimist View on Instrumental Reason*

The first possible answer to Feenberg's critique of technology builds on insights of Habermas, Leiss and other theorists who perceive both the negative effects of the colonization of the lifeworld on the first level and the implementation bias on the second level as an entirely social problem – a problem of imperfect social organization. As Eckersley puts it, these theorists suppose that "problems of advanced industrial societies do not stem from technocratic rationality per se but rather from the fact that technocratic rationality [instrumental reason] has not been accompanied or matched by a concomitant rationalization of social norms."[70] Habermas in this context calls for rationalization of social communication via enhanced democratic and free discussion[71] to do away with both the negative effects of the colonization of the lifeworld and the implementation bias. Leiss on

[70] Robyn Eckersley, "Habermas and Green Political Thought: Two Roads Diverging,"Theory and Society 19, No. 6 (1990): 746.
[71] Ibid, p.746.

the other hand sees the desired[72] rationalization of social norms rather in "the diffusion of an enlightened, 'evidence-based' model of analysis into institutions, welfare policies, laws, universal education, moral theory, somatic and psychiatric medical therapies, penal systems, and behavioral control strategies"[73]

The Optimists basically reject any claims about inherently violent instrumental reason. They see instrumental attitude as 'objective character of human labor' and 'species-wide interest.' They seek to avoid claims about inherent bias of instrumental reason as they fear that such claims may lead to technophobia and general rejection of science and technology.[74] This is, they argue, highly undesirable, because what we need - in order to solve the problems of colonization of lifeworld[75] and the problem of implementation bias[76] - is even more rationality, science and technology to perfect the social organization - to do away with its irrationality[77] and to promote democratic and free discussion. What they refer to is a kind of liberative faculty of instrumental reason or 'liberative mastery of nature.' This faculty brings relief from pain, disease, hard work and, as argued by Leiss, "counteracts the twin obstacles to human development: first, lack of adequate material security, a necessary precondition for the full unfolding of human creativity, and second, a subjection to irrational forms of thought."[78]



[72] Rationalization that would improve social organization and hence would 'fix' negative effects of the colonization of the lifeworld and the implementation bias

[73] In a sense, what he promotes is a further colonization of the lifeworld, constrained probably only by habermasian free and democratic discussion.
Leiss, William. "Modern Science, Enlightenment and the Domination of Nature: No Exit?"

[74] Anderw Feenberg: "Marcuse or Habermas: Two Critiques of Technology," Inquiry 39, 1996, pp. 45-70.

[75] which consist in lack of free and democratic discussion and imperfect (not rational enough) social organization

[76] Which consist in social hierarchies misusing the value-neutral system to master the system, inner nature and outer nature (this is, again a problem of imperfect society)

[77] Including the irrationality of social hierarchies that bias design (at the first level of critique in Feenbergs's model ) and implementation (at the second level) of market, administrative and technological mechanisms. Proponents of this stance argue that the instrumental reason that brings relief of scarcity (frees man from oppressive external nature) and thus render hierarchies useless. However, there is a counterargument to this stance that has been already mentioned above: new hierarchies are needed in order to administer control over nature.

[78] Leiss, William. "*Modern Science, Enlightenment and the Domination of Nature: No Exit*?"

Hence, the solution is not to retreat from instrumental reason, but actually to employ more instrumental reason. This means advancing the 'the diffusion of an enlightened, 'evidence-based' model of analysis,' in the areas of lifeworld colonized by the instrumental reason while promoting free and democratic discussion to restrain this colonization within its appropriate limits.

## *3.2 Pessimist View on Instrumental Reason*

In contrast to the Optimists, who do not see the instrumental reason as inherently and inevitably biased, the proponents of the pessimistic view, including Brian Easlea and Martin Heidegger for example, offer a radically different answer to Feenberg's critique of technology. The Pessimists fully agree with Feenberg's argument that by virtue of its practical application, the abstract and value-free instrumentality becomes inherently and inevitably biased. This bias reflects values of social elites who, while creating and implementing media, seek to reproduce and sustain their position. In addition to this inherent and evitable social bias of instrumental reason as understood by Feenberg, the Pessimists continue to deepen the critique of instrumental reason[79] by claiming that its principles are value-laden and hierarchical even in their abstract form.[80] In other words the Pessimists claim that the very logic of instrumental reason, even in its abstract and pure form requires and produces hierarchy. Hence, it is not merely about abstract and value-free reason that becomes socially biased in the process of its application, but there is some deeper 'hegemony'- 'violence'-'bias' or 'value-ladenes' that is inherent in the very logic of the instrumental reason and that confronts both man and nature at a more fundamental level. Cary Wolfe argues that "abstraction is perforce order - seeing one

[79] Which may be perceived as adding another, third level of critique
[80] This is an important point, in which the Pessimists depart from Feenberg. As already stated, Feenberg believes that in their abstract form, the principles of instrumental reason are indeed neutral.

thing in terms of another," what inevitably involves some kind of hierarchy and hierarchy in turn brings authority.[81] Heidegger illustrates the inherent violence of instrumentality in its abstract form on an example of technological principles:

> The revealing that rules in modern technology is a challenging [Herausfordern], which puts to nature the unreasonable demand that it supply energy that can be extracted and stored as such. That challenging happens in that the energy concealed in nature is unlocked, what is unlocked is transformed, what is transformed is stored up, what is stored up is, in turn, distributed and what is distributed is switched about ever anew. Unlocking, transforming, storing, distributing and switching about are ways of revealing…everywhere, everything is ordered to stand by, to be immediately at hand, indeed to stand there just so that it may be on call for further ordering. [82]

In short, the pessimistic view on instrumental reason points to its inherent violence, soullessness and reductionism that stem from the notion that nature and by extension people are only a stock of usable raw material at our disposal.[83] In this view the system driven by instrumental reason will always, inevitably and endlessly seek to colonize the lifeworld. As it is 'rotten' to the very core, it is not 'redeemable' and the only solution is the decolonization or 'reconquest' of both the natural and social life world from the oppressing and destructive rule of instrumental rationality.

## *3.3 Reformist View on Instrumental Reason*

The reformist view of instrumental reason takes the middle position and offers the third answer and solution to Feenberg's critique. Unlike the Optimists, the Reformists - including Feenberg himself and Eckersley among others - believe that indeed the social bias is inevitable and inherent to instrumental reason when it is implemented within a certain socioeconomic structure. In other words they believe that no value-free instrumentality can

[81] Cary Wolfe, "Nature as Critical Concept: Kenneth Burke, the Frankfurt School, and "Metabiology, " Cultural Critique, No. 18, (1991): 82. http://www.jstor.org/stable/1354095.
[82] Martin Heidegger, The Question Concerning Technology and Other Essays ( New York: Harper and Row, 1977), 14-17.
[83] Brian Easlea, "Who Needs the Liberation of Nature?" *Science Studies* 4, No. 1 (1974): 88.

be realized in social practice. However, unlike the Pessimists, the Reformists believe that instrumental reason is redeemable and that there is a possibility to benefit from its advantages that are so vehemently advocated and highlighted by the Optimists, while minimizing or offsetting the deep violence of instrumentality as it is articulated by the Pessimists.

The redemption consists in democratization, but not merely at the level of discussion about societal goals and questions of good life, which should be then arrived at by means of supposedly value free instrumentality. As the reformists do not believe in the possibility of implementing instrumentality in a value-free manner, what they call for is a consciousness reflection of this implementation process – with a bit of exaggeration, we could say that they demand a democratic process of biasing the instrumentality. In other words, as we cannot help the fact that the instrumental reason is value laden, the solution proposed by the Reformists would be to fill it with new values that will reflect actual social and environmental problems. This is a solution that differs from both the proposal to abandon the instrumental reason entirely (as proposed by extreme Pessimists) and the proposal to deny the fact that the implementation bias of instrumentality is inherent and inevitable (as argued by the optimists, who believe that instrumentality is inherently value free and that there is a way how to implement it without filling it with value).



According to both Eckersley and Feenberg, this 'democratic biasing' should be performed at the level science and technology - realms that are most intimately involved with instrumental reason[84] and that have become "the dominant arbiter of our picture of

[84] Economy and administration – as other media build upon the instrumental reason may be understood in this context as technology as well.

reality in the modern world."[85] The goal is to conceive a science and technology that would be open and responsive to democratic biasing by new values and morality and at the same time would not allow "replacing the pragmatic criterion (based on instrumentality) with a purely moral one, for that would indeed render science useless in terms of providing reliable knowledge about the world."[86] In other words, the goal is to come up with science and technology that is "instrumental in method, but not in spirit or application."[87]

Restricting instrumentality strictly to the realm of scientific method and reconsidering science and technology and its application as a 'human project'[88] that is open to valuative choices should help to retain the benefits and fix the shortcomings of violent instrumentality as they appear. The space for maneuvering when trying to fix the negative effects will be granted precisely by the openness to and awareness of the valuative choices, so that science and technology would be able to "embrace numerous possibilities through shifts of emphasis and exclusions."[89]

As far as the science alone is concerned, the openness to valuative choices may be justified on a basis of an argument that science as a general human project is essential in providing humankind with meaning and thus is not reducible to the enterprise of producing instrumental knowledge about the world.[90] Or according to Nishitani: "The essence of science is not 'scientific.' The essence of science is something to be brought into question in



[85] Robyn Eckersley, "Habermas and Green Political Thought: Two Roads Diverging," Theory and Society 19, No. 6 (1990): 767.
[86] Robyn Eckersley, "Habermas and Green Political Thought: Two Roads Diverging,"Theory and Society 19, No. 6 (1990):767.
[87] Ibid, p. 767
[88] Ibid, p. 767
[89] Anderw Feenebrg: "Marcuse or Habermas: Two Critiques of Technology," Inquiry 39, 1996, pp. 45-70.
[90] Ibid, p.766

the same realm where the essence of man becomes a question to man himself."[91]As a green political theorist, Eckersley envisages such a new science that would be attentive and responsible to the environmental degradation caused by mediation. She outlines the possibility of a scientific community that:

> may proceed on the basis of an *interest* in nature that is not one of instrumental control and an *image* of nature that is not one of manipulable matter. It is surely not incongruous to suggest that a different and better science might result from a community of scientists who follow the experimental method but who nonetheless do not perceive their subject matter in terms of the image of nature that their method calls forth but instead proceed from an ecocentric orientation toward the world.[92]

Further, as far as technology alone is concerned, its openness to valuative choices may be defended on a basis of an argument that modern technology is not reducible to technical principles and that indeed it has become "the form of modern experience itself, the principal way in which the world is revealed."[93] As a philosopher of technology, Feenberg then conceives the reformist project of 'value-friendly-approach' in the realm of technology: not only science as a human project but the technology itself as a form of modern experience should be layered with democratic demands.[94] As a response to environmental degradation, these democratic demands could for example embrace requirement to design technology in accord with environmental values so that "nature would be treated as another subject where humans took responsibility for the well-being of the materials they transform in creating the built environment."[95] In light of these democratic demands or these new values, different technological choices will be made. This would result in an 'alternative industrial



[91] Nishitani In: Steven Heine: "Philosophy for an 'Age of Death': The Critique of Science and Technology in Heidegger and Nishitani," Philosophy East and West 40, No. 2, ( 1990): 178.
[92] Robyn Eckersley, "Habermas and Green Political Thought: Two Roads Diverging,"Theory and Society 19, No. 6 (1990):767.
[93] Andrew Feenberg, *Heidegger and Marcuse: The Catastrophe and Redemption of History*, (New York: Routledge, 2005), p. xiii.
[94] Anderw Feenebrg: "Marcuse or Habermas: Two Critiques of Technology," Inquiry 39, 1996, pp. 45-70
[95] Ibid

design.'[96]According to Feenberg, this democratic process of biasing instrumentality in the realm of technology is something that Terry Winograd and Fernando Flores have called "ontological designing – the conscious construction of technological worlds that support a desirable conception of what it is to be human."[97] Or, as put by Heine, it is about prioritizing ethics over ontology.[98]

## *3.4 Insights of Social Constructivist Studies in Science and Technology*

At this point, two questions arise: (1) Do we actually have different technological choices? (2) If we have, are they equally efficient?

The first question deals with the problem of technological determinism (as outlined for example by Thomas J. Misha in his overview of theoretical approaches to technology),[99] which poses an objection to Feenberg's reformist project by claiming that there is only one possible line of technological development. It is the "content and internal structure of a technological system… [that]determine the direction or rate of [this] development."[100] The claims about technological determinism have been invalidated to a large extend in the field of Social Constructivist Studies in Science and Technology, that has provided a considerable body of evidence about the predominantly accidental character of technical development and thus has shown that this alternative way of technical designing (alternative industrial design) is indeed possible.[101] These findings suggest that what is retrospectively, from a 'macro (order-driven) perspective' perceived as the only rational technological choice (in terms of



[96] Andrew Feenberg, "Values and the Environment," Selected Talks. Simon Fraser University, Canada.
[97] Andrew Feenberg, "Modernity Theory and Technology Studies" in Modernity and Technology, ed. Thomas J. Misa, Philip Brey and Andrew Feenberg (Cambridge and London: The MIT Press, 2003), 103.
[98] Steven Heine, "Philosophy for an 'Age of Death': The Critique of Science and Technology in Heidegger and Nishitani," Philosophy East and West 40, No. 2, ( 1990): 178.
[99] Thomas J. Misa, "How Machines Make History, and How Historians (And Others) Help Them to Do So," Science, Technology, & Human Values 13, No. 3/4, (1988): 310.
[100] Ibid, p. 319
[101] Ibid, p. 322

efficiency for example) at the given stage of technological development, often proves to be a matter of coincidence or specific valuative choice when scrutinized more deeply or from a micro (disorder-respecting) perspective. Misa ascribes this misperception to the "exigencies of synthesis and the assumptions inherent in a macro viewpoint… [where]…macro structures comprise nothing more than the efforts of micro actors to translate their individual wills into a collective will and to enroll other actors in their designs."[102]

These insights then also partially answer the second question about efficiency. Different technological choices reflecting different valuative choices are incommensurable. Inefficiency is always relative –it relates to the values and purposes of a particular technological design. If we assume the primacy of ethic over onthology, then as soon as we choose new values to be embedded in technological design,question of efficiency in terms of the old design becomes irrelevant. New values bring new frontiers of rationality, rendering some options to be beyond these frontiers of rational calculus. Feenberg argues that, "technological revolutions look irrational at first but in fact they simply establish another framework for rationality, another paradigm."[103] As Feenberg expects resistance of the 'old values,' he believes that the new path of technological development should be initiated and boosted by regulation.[104]



[102] Thomas J. Misa, "How Machines Make History, and How Historians (And Others) Help Them to Do So," Science, Technology, & Human Values 13, No. 3/4, (1988): 320- 321.
[103] Andrew Feenberg, "Values and the Environment," Selected Talks. Simon Fraser University, Canada.
[104] Ibid.

# Chapter 4: Clean Development Mechanism – Two Level Critique and Three Answers

Building on the theoretical framework developed in the previous chapters, it is possible to conceive an analysis of the CDM and to deliver normative reflections on this market-based instrument of current climate architecture. These may subsequently serve as a basis for the post-2012 arrangements.

## *4.1 Clean Development Mechanism*

The CDM, together with emission trading and joint implementation, constitute the so called Kyoto flexible mechanisms designed to facilitate the cost-effective compliance of the Annex I countries that have committed themselves to limit or reduce emissions of greenhouse gases by at least 5% below the 1990 levels during the 2008-2012 period. General character and operation of CDM is defined in the Article 12 of the Kyoto Protocol. According to the Article, private or public entities that run out of their emission credits assigned to them by their national authority with regard to the national emission targets, can gain additional emission credits by investing in a CDM emission reduction project in a developing country (non-Annex I country). This allows 'the undisciplined' emitters to offset their excess emissions by reducing emissions in a developing country and hence allows for some flexibility in how they can meet their emission targets. In addition, Article 12 specifies that the CDM emission reduction project should deliver reductions that are "additional to any that would occur in the absence of the certified project activity."[105] This 'additionality principle' seeks to ensure that CDM project contributes to net emission reductions and sustainable development of developing countries.

[105] Kyoto Protocol to the United Nations Framework Convention on Climate Change, Article 12.

According to the proponents of CDM (mostly industry groups, environmental pragmatists, neo liberals and techno progressivists) the mechanism contributes to the most effective allocation of mitigation costs on a global scale and stimulates innovative green solutions and technology transfer. The mechanism is operational since 2005, after the Kyoto Protocol came into force, and so far more than 1000 projects from 49 countries have been registered (out of the total amount of 3000 projects that are currently in the CDM pipeline). The mechanism is also expected to produce additional emission credits amounting to more than 2.7 billion of tones of CO2 equivalent in 2008-2012.[106]

## *4.2 Two Level Critique of Clean Development Mechanism*

CDM as a market based administrative instrument aimed at technological solutions and driven by instrumental reason has been criticized widely by grassroots movements, proponents of environmental justice as well as some scholars. To structure the manifold aspects of this critique of CDM, I will follow the two-level framework as proposed by Feenberg.

### 4.2.1 First Level of Critique

As far as the first level of the critique is concerned, replacement of 'democratic consensus by an informed citizenry' with a 'technical discussion by a minority of experts' can be in case of the CDM observed partly in the fact that transnational corporations and institutions like the World Bank have taken the lead in proposing CDM projects and managing the CDM market and partly on the procedure of the CDM project approval.

The reason for transnational corporations and the World Bank to take the lead in proposing the CDM projects and managing the CDM markets (markets with emission credits

[106] http://unfccc.int/kyoto_protocol/mechanisms/clean_development_mechanism/items/2718.php

gained via the CDM) lies mainly in their financial and expert capacities and worldwide reach. Moreover, their institutionalized status gives them an advantage in pursuing CDM projects to the detriment of local indigenous people- which is relevant especially in the case of carbon sequestration projects. These are projects aimed at activities that absorb carbon from the atmosphere (ocean, forests, soils) as absorption is considered to be equivalent to emission reduction.[107] The fact that an official status is required to submit the CDM project and to manage the sinks opens an opportunity "for extended encroachment on the lives of indigenous peoples by government and corporations, expanding the potential for neo-colonial land-grabbing."[108] This may further lead to pursuit of various perverse and 'technicized' sink management practices instead of indigenous practices. The most often mentioned 'technicized' sink management practice in this context is replacement of autochthonous old vegetation by monoculture plantations with higher absorption capacities. As far as the position of the World Bank on the CDM market is concerned, according to the Institute for Policy Studies, the World Bank has appointed itself as a broker between Northern and Southern governments and industries.[109] The fact that the World Bank has a dominant position in administering various national carbon funds (funds established to purchase and trade carbon credits) and at the same time pursuits CDM projects together with carbon-intensive projects in developing countries (fossil fuel projects like power plants end extraction in developing countries without binding emission targets ) clearly points to potential conflict interest unconstrained by public supervision.[110]



[107] Michael Grubb, *The Kyoto Protocol*: *A Guide and Assessment* (London: Royal Institute of International Affairs, 1999), 76.
[108] Heidi Bachram, "Climate Fraud and Carbon Colonialism: The New Trade in Greenhouse Gases," *Capitalism Nature Socialism* 15, No 4 (2004): 9.
[109] Jim Vallette, Daphne Wysham, and Nadia Martínez, *A Wrong Turn from Rio: The World Bank's Road to Climate Catastrophe* (Institute for Policy Studies, 2004), 8.
[110] Jim Vallette, Daphne Wysham, and Nadia Martínez, *A Wrong Turn from Rio: The World Bank's Road to Climate Catastrophe* (Institute for Policy Studies, 2004), p. 8.

As far as the procedure of CDM project approval is concerned, this consists in several steps. First, the potential future project needs to be approved by Designated National Authority and Designated Operational Authority. They both assess whether the proposed project meets the criteria of additionality and whether it contributes to sustainable development. The project proposal at this stage is opened for public comments and there is also possibility to appeal the decision of Designated National Authority to the relevant minister. After being approved at the national level, the final decision about the eligibility of the project is made at the CDM Executive Board under the auspices of UNFCCC.[111] As the criteria for additionality and sustainable development are defined quite vaguely, this opens way to speculations at the expert level what bears risks that projects without genuine contribution to sustainable development or projects that would be anyway (even without incentives offered by the CDM) are granted additional emission credits. Especially the criterion of additionality is problematic, as it raises the question of 'baseline' definition (question about emissions level without the project). Bachram explains:

> The amount of credits earned by each project is calculated as the difference between the level of emissions with the project and the level of emissions that would occur in an imagined alternative future without the project. With such an imagined alternative future in mind, a corporate polluter can conjure up huge estimates of the emissions that would be supposedly produced without the company's CDM or JI project. This stratagem allows for a high (almost limitless) number of pollution credits that can be earned for each project.[112]



When designed like this and with a generally unambitious emission reduction target of the Kyoto Protocol (5% below the 1990 levels for developed countries and no target for developing countries), the CDM only offsets the emissions from developed countries and

[111] Graham Erion, Low Hanging Fruit Always Rots First: Observations from South Africa's Crony Carbon Market, University of KwaZulu-Natal, Durban, South Africa 2005, p 9-11.
[112] Heidi Bachram, "Climate Fraud and Carbon Colonialism: The New Trade in Greenhouse Gases," *Capitalism Nature Socialism* 15, No 4 (2004): 4.

actually even allows these emissions to increase in absolute terms.[113] This subsequently may raise questions about effectiveness, appropriateness and necessity of this 'colonization of the lifeworld.'

### 4.2.2 Second Level of Critique

It is possible to play down the first level critique by claiming that the 'colonization of the lifeworld' is in case of the CDM indeed necessary as the whole attempt to mitigate the climate change inevitably involves a high level of market, administrative and technological expertise coordination and managerial excellence in order to be successful (effective, productive and utile). However, still there is the second level of the critique that needs to be considered.

As outlined in the first chapter, the second level critique deals with the implementation bias that accompanies any execution of instrumental reason. In case of the CDM the second level critique may be formulated as following: even when the CDM is appropriately designed (with regard to democratic, social and environmental demands), still the biased instrumental logic of market, administration and current industrial design[114] will prevent the CDM to deliver the desired social and environmental results.

Negative social and environmental effects of biased market and current industrial design have already been outlined in the previous section. Another drawback, more connected to the second level critic, is that CDM market will favor the so called "low hanging fruits"[115] in the initial phases. These are cheap projects that basically do not involve much innovation or technological transfer and hence hardly contribute to clean or sustainable development.

[113] CAN International. Views regarding the second revier of the Kyoto Protocol under Article 9. March 2008.
[114] biased = socially and environmentally indifferent
[115] Jim Vallette, Daphne Wysham, and Nadia Martínez, *A Wrong Turn from Rio: The World Bank's Road to Climate Catastrophe* (Institute for Policy Studies, 2004), 8.

This is the case of methane capture from toxic waste dumps, for example.[116] Moreover these low-quality projects may even have perverted social and environmental effects, especially in the case of sinks and emission reductions without clearly recognizable baselines and additionality effects (construction of huge water dams, monoculture plantations with higher absorption capacities than the original forests or vegetation, land enclosures, forced resettlement of indigenous people). More expensive and sophisticated transfer of renewable technologies or innovative energy efficiency technologies that would bring genuine clean development will take place only when the carbon price is high enough. According to the Institute for Policy Studies, an internal document of World Bank estimates that high-quality CDM investments in renewables or innovative energy efficiency technologies would pay off in case when the carbon price arrives at 200 USD per ton or more. This is not likely to happen in the first commitment period, mainly because of generous emission permits for Ukraine and Russia and because of quite unambitious emission reduction target for the first period, what will probably keep the carbon price quite low.[117] This means that until the carbon price is high enough, the CDM does not support the transformation – or biasing - of technology in an environmentally and socially friendly manner as it is demanded by Feenberg.

Another perverted effect of environmentally and socially indifferent market and technology has been described by Yda Schreuder and Christopher Sherry.[118] Based on the example of US electric power industry they demonstrate how transnational corporations are engaged both in 'carbon-intensive development patterns'[119] and in CDM projects at the same time. As the CDM works on 'project by project base' and does not consider performance of a



[116] Ibid, p. 4
[117] Ibid, p. 9
[118] Yda Schreuder and Christopher Sherry, "Flexible Mechanisms in the Corporate Greenhouse: Implementation of the Kyoto Protocol and the Globalization of the Electric Power Industry," *Energy and Environment* 12, No. 5&6 (2001).
[119] by funding 'dirty'-carbon intensive industrial projects (extraction, power plants) in developing countries that are currently without any emission limitation or reduction obligations

corporation as a whole, the corporations find themselves in a situation, where they are rewarded for the 'green' behavior and not punished for the 'dirty' behavior when investing in a particular developing country. When following strictly the instrumental logic, this may result in "a perverse incentives to allow the lowest possible baseline for energy projects" (for example when reducing emissions from a power plant that they themselves have built).[120] Schreuder and Sherry argue that, it is possible that "the financial imperatives of transnational corporations are engendering the development of unsustainable economic and environmental systems."[121] To put it more simply, following the narrow instrumental reason in the context of current CDM, it is rational to promote the dirtiest (and cheapest) possible path of development in developing countries (as they do not have emission targets) in order to profit subsequently from CDM projects aimed at cleaning the produced (unnecessary) dirt. This, again, allows hardly any progress toward the technology innovations or biasing the technological design in an 'ecofriendly' and socially responsible way.

### *4.3 Three Answers to the Two Level Critique of CDM*

The Optimists' answer to the above proposed two level critique of instrumentality embedded in the CDM would be that the instrumental logic behind the CDM is indeed correct and the failure to deliver the desired results in certain cases can be ascribed to an imperfect usage of instrumentality. To avoid this failure in the post-2012 climate architecture, a more instrumental rationality should be employed in upgrading the design of future CDM. They would argue that more instrumentality can be employed via proper administrative regulation that would ensure more consistent local community participation in the CDM projects decision making or to that will promote clear and proper administration of land, forest and

[120] Jim Vallette, Daphne Wysham, and Nadia Martínez, *A Wrong Turn from Rio: The World Bank's Road to Climate Catastrophe* (Institute for Policy Studies, 2004), 8.
[121] Yda Schreuder and Christopher Sherry, "Flexible Mechanisms in the Corporate Greenhouse: Implementation of the Kyoto Protocol and the Globalization of the Electric Power Industry," *Energy and Environment* 12, No. 5&6 (2001):493.

water property rights. A better CDM design would also embrace an explicit requirement of technology transfer as a condition of registering a CDM project. Another receipt of the Optimists would be to 'get the prices right'[122] – to fix the currently distorted international carbon market and to encourage worldwide participation on this market.

The Reformists would argue that even when designed and managed in a more sophisticated way, the CDM will inevitably fail to deliver the results because of the biased instrumental logic behind it. The solution would be to employ more 'command and control' instruments - such as more stringent definition of sustainable development and additionality principles, tougher emission reduction targets, compulsory and clearly defined domestic action, higher levy on all flexible mechanisms (currently here is only 2% levy on the CDM) or even carbon tax.[123] Revenues from carbon tax or levies on flexible mechanisms can be subsequently used to fund public clean technology dissemination and clean grassroots initiatives. The argument here is that regulation is needed in order to redirect the technological development path as well as the whole instrumentality of market and administration towards more greener and socially responsible values. In contrast to the Optimists, the Reformists would also claim, that creating incentives for technology transfer to developing countries targeted predominantly on private sector will not give the needed impetus for this kind of radical redirection. As argued by Clémençon, the main obstacles are the concerns about intellectual property rights, which may hinder the willingness of companies from developed countries to share their advanced and expensive clean technologies with developing countries, even when they are given market-based incentives via the CDM. This holds true largely for growing economies of China, India and Brazil as well, who are already competitive in



[122] Steven Bernstein, *The Compromise of Liberal Environmentalism* ( New York: Columbia University Press, 2001), p. 77.
[123] Raymond Clémençon, 'The Bali Road Map: A First Step on the Difficult Journey to a Post-Kyoto Protocol Agreement,' The Journal of Environment Development 17, no. 1 (2008): 81.

biofuels, photovoltaics, and wind energy technologies.[124] This is exactly the problem of 'low hanging fruits,' 'cheap paths of development' and a proper and stable carbon price as it was discussed earlier. As summed up by Axel Michaelowa, Kristian Tangen and Henrik Hasselknippe,

> it can be questioned whether carbon prices will ever reach a level where they become a potent technological driver. Nevertheless, technological change with a subsequent massive diffusion of the newly developed technology, particularly in the developing countries, is crucial for efficiently and massively reducing emissions in the future, and could be a key to increasing participation by developing countries.[125]

And lastly, the Pessimists would argue that the CDM, together with other flexible mechanisms fosters an unacceptable 'privatization of global resources.' By its very logic the system is wrong and an entirely different approach to climate change management should be adopted. Bachram sums it up: "by its very nature, an emissions credit entitles its owner to dump a certain amount of greenhouse gases into the atmosphere. Control of such credits effectively leads to control of how the atmosphere, perhaps the last global commons, is used."[126] According to the Pessimists the process of clean development of developing countries should be based on more community-driven principles.[127]Another possible option would be the so called REDD (Reducing emissions from deforestation and ecosystem degradation) mechanism, which – when designed with respect to local communities – will be able to secure sustainable ecosystem management and conservation, carbon offsets and poverty reduction at the same time.[128] However, REDD rests on the same market –based principles as the flexible mechanisms and hence, from the Pessimists' point of view, it is a kind of compromise and concession in favor of the market instrumentality.



[124]Raymond Clémençon, 'The Bali Road Map: A First Step on the Difficult Journey to a Post-Kyoto Protocol Agreement,' The Journal of Environment Development 17, no. 1 (2008): 91.
[125] Axel Michaelowa, Kristian Tangen and Henrik Hasselknippe, "Issues and Options for the Post-2012 Climate Architecture – An Overview," *Inetrnational Environmental Agreements* 5, No 1 (2005): 20.
[126] Heidi Bachram, "Climate Fraud and Carbon Colonialism: The New Trade in Greenhouse Gases," *Capitalism Nature Socialism* 15, No 4 (2004): 9.
[127] Carbon Trade Watch, The Carbon Neutral Myth: Offset Indulgencies for Your Climate Sins, February 2007. http://www.carbontradewatch.org/pubs/carbon_neutral_myth.pdf
[128] IUCN: Forests and Livelihoods. December 2007. http://cmsdata.iucn.org/downloads/climate_change_forest.pdf

# Conclusion

The Clean Development Mechanism as one of the key instruments of current climate change architecture has so far failed to a great extend to deliver positive developmental and environmental effects that it was designed for. While relatively successful in facilitating cost-effective compliance with Kyoto's emission reduction targets for developed countries, it has not brought substantial environmental or developmental benefits for developing countries. Theoretical reflections on instrumental logic that lies behind the CDM have revealed three possible explanations and solutions to this failure. The first explanation offered by proponents of the optimistic view says that the CDM has failed simply because no enough instrumental reason has been employed to design it. The solution for the post-2012 climate architecture is then not to abandon the CDM, but to refine its design using actually more instrumental reason and more sophisticated administrative tools. The second explanation, given by the proponents of reformist view argues that even when designed more sophistically (as the optimists would propose), the CDM will inevitably fail to deliver the results as long as the instrumental logic behind the CDM design and behind the technology in general remains biased (environmentally and socially indifferent). The solution is to regulate the CDM more tightly with environmental and developmental goals in mind and/or to promote other instruments that would support development and dissemination of clean (environmentally and socially friendly) technology. The last, pessimistic answer would see the CDM as essentially and inevitably wrong and unable to deliver any positive environmental or social effects. The solution is then to abandon the CDM and employ mechanisms that would encourage conservation of ecosystems of developing countries rather than attempts to promote clean path of their development. The possible instrument for the post-2012 climate architecture in this sense would be the so called REDD (Reducing emissions from deforestation and ecosystem degradation) mechanism.

Because of the space constraints, the thesis has offered only an illustrative outline and no deeper analysis of instruments and measures that, according to the above mentioned views, should supplement or replace the CDM. However, even this illustrative outline conveys the main thrust of the critique of instrumental reason behind the CDM: the mechanism will have to be redesigned in a more ecofriendly and socially responsible manner in order to address its environmental and developmental goals better in the post-2012 climate architecture.

The theoretical reflections that have delivered the above mentioned three explanations and solutions draw heavily on Andrew Feenberg's two-level critique of instrumental reason. In this thesis I have first layered his two-level critique with insights from Green Political Theory and then I have expanded it – using some insights from Social Constructivist Studies in Science and Technology - by offering three possible answers and solutions to it. As such, this layered and expanded theoretical framework can be understood as a useful tool for International Political Theory. As the value-neutral mainstream IR Theory necessarily overlooks the normative aspects that drive and dynamize the whole process of environmental degradation, International Political Theory, equipped with tools like this, is better qualified to deliver reflections on global environmental issues. These reflections may subsequently serve as a basis for political action to improve conditions of both humans and nature.

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