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An Ethical Analysis of the Cancun Climate Negotiations Outcome*

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Un análisis ético del resultado de las negociaciones climáticas de Cancún

ABSTRACT: This essay looks at two possible conflicting conclusions about Cancun Summit through an ethical lens. It will explain that although some hope for a global solution to climate change is still alive due to decisions adopted in Cancun, one must see Cancun in the context of a twenty-year failed attempt to prevent dangerous climate change.

RESUMEN: Este ensayo analiza –desde unas lentes éticas– las dos conclusiones posibles sobre los resultados de Cancún. Explicará que, aunque todavía queda alguna esperanza de encontrar soluciones globales al cambio climático debido a las decisiones adoptadas en Cancún, uno debe ver Cancún en el contexto de un error de veinte años en el intento de prevenir un cambio climático peligroso.

KEYWORDS: ethical lens, Cancun Summit, meaningful commitments

PALABRAS-CLAVE: lentes éticas, Cumbre de Cancún, compromisos con sentido

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1. Introduction

Two dramatically conflicting headlines about the outcome of the recently concluded Cancun United Nations Framework Convention On Climate Change's 16th Conference of the Parties (COP) are initially defensible. One might be: **Nations At Cancun Tragically Fail to Make Meaningful Commitments on Climate Change for the Twentieth Year In A Row** Another might be: **Cancun Surprises Many By Keeping Hope Alive for A Global Climate Change Deal.**

This essay looks at these conflicting conclusions about Cancun through an ethical lens. This post will explain that although some hope for a global solution to climate change is still alive due to decisions adopted in Cancun, one must see Cancun in the context of a twenty-year failed attempt to prevent dangerous climate change. From that standpoint Cancun must be seen as another troubling ethical failure of those most responsible for climate change. This is a tragedy because each year when there has been a failure to commit to adequately reduce greenhouse gas (GHG) emissions have made it more difficult in subsequent years to get on a ghg emissions reduction pathway capable of preventing serious climate change.

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For some, the modest progress in Cancun toward a global approach to climate change has been seen as a positive step forward (BBC, 2010). This is so because many thought that the UNFCCC architecture for a global solution to climate change was in jeopardy of completely unravelling before Cancun; a legal structure that had been gradually been put into place since 1990 when negotiations on a global solution to climate change began. Yet, this post will argue that Cancun must be seen in the context of what has failed to happen in the last twenty years on climate change and not only on the basis of the very limited positive steps made in Cancun.

To many others, Cancun was another tragic lost opportunity for the international community to prevent dangerous climate change, as well as, the most recent in a series of moral failures of those most responsible for climate change to commit to steps necessary to protect those who are most vulnerable to climate change's harshest impacts. One observer of Cancun concluded, for instance, that:

The Cancun Agreements of the 2010 UN Climate Summit do not represent a success for multilateralism; neither do they put the world on a safe climate pathway that science demands, and far less to a just and equitable transition towards a sustainable model of development. They represent a victory for big polluters and Northern elites that wish to continue with business-as-usual. (IBON, 2010)

We must see climate change as an ethical problem because: (a) it is a problem caused by some people in one part of the world that puts others and the natural resources on which they depend at great risk, (b) the harms to these other people are not mere inconveniences but in some cases catastrophic losses of life or the ability to sustain life, and (c) those who are vulnerable to climate change cant petition their governments to act to protect themselves but must rely upon a hope that a sense of justice and responsibility of those causing the problem will motivate them to change their behaviour. Because climate change raises civilization challenging ethical questions, any proposed climate change regime must be examined through an ethical lens.

This post reviews the Cancun outcome through an ethical lens in light of the overall responsibility of those nations that are exceeding their fair share of safe global emissions in regard to their duties: (a) to reduce greenhouse gas emissions to levels necessary to prevent harm to others, (b) to reduce greenhouse gas emission to levels consistent with what is each nation's fair share of total global emissions, and (c) to provide financing for adaptation measures and other necessary responses to climate change harms for those who are most vulnerable and least responsible for climate change.

To understand the significance of what happened in Cancun, it is necessary to briefly review the history of international negotiations leading up to Cancun. That is, it is not sufficient to simply examine what happened in Cancun without seeing Cancun in the context of the twenty-year negotiating history whose goal has been the prevention of dangerous climate change and the harms that each year of delay in agreeing to a global deal exacerbate.

2. The Path to The Cancun Agreement

The Cancun conference took place from November 29 to December 10, 2010. The Cancun goals were modest in light of the failure of COP-15 in Copenhagen the year before to achieve an expected global solution to climate change. Copenhagen was expected to produce a global solution to climate change pursuant to a two-year negotiating process and agenda that was agreed to in Bali, Indonesia, in December 2007.

To understand the ethical significance of the Cancun Agreements, it is necessary to review the twenty-year history of climate change negotiations that led to Bali, Copenhagen, and Cancun. This history constitutes a failed attempt over two decades to adopt a global solution to climate change.

Negotiations on a global climate change deal began in 1990 and led to the United Nations Framework Convention on Climate Change (UNFCCC).in 1992 (Bodansky,2001) The climate change negotiation process began in December 1990, when the UN General Assembly established the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change, to negotiate a convention containing "appropriate commitments" in time for signature in June 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro. Because of the opposition of the United States and a few other countries, this treaty itself did not contain binding greenhouse gas (ghg) emissions limitations for countries but nevertheless included numerous other binding national obligations. Among other things, for instance, the parties to the UNFCCC agreed that:

(a) They would adopt policies and measures to prevent dangerous anthropogenic interference with the climate system; (b) Developed countries should take the first steps to prevent dangerous climate change; (c) Nations have common but differentiated responsibilities to prevent climate change; (d) Nations may not use scientific uncertainty as an excuse for not taking action; and, (e) Nations should reduce their ghg emissions based upon "equity." (UN, 1992)

In the early UNFCCC negotiations, the European Union and Association of Small Island States (AOSIS) advocated establishing a target and timetable to limit emissions by developed countries in the UNFCCC, while the United States and the oil-producing states opposed this idea. (Bodanksy, 2001). Other developing states generally supported targets and timetables, as long as it was clearly understood that these targets and timetables would apply only to developed states. (Bodanksy, 2001)

The UNFCCC has 192 parties, a number that includes almost all countries in the world including the United States which ratified the UNFCCC in 1993.

The UNFCC is a "framework" convention because it has always been expected that additional requirements would be added to the initial framework in updates that are known as "protocols" or in annual decisions of the conferences of the parties (COPs).

Each year as the parties to the UNFCCC meet in COPs, decisions were made that affect the responsibilities of the parties. The UNFCCC COPs were as follows:

- 1995 - COP 1, The Berlin Mandate
- 1996 - COP 2, Geneva, Switzerland
- 1997 - COP 3, The Kyoto Protocol on Climate Change
- 1998 - COP 4, Buenos Aires, Argentina
- 1999 - COP 5, Bonn, Germany
- 2000 - COP 6, The Hague, Netherlands
- 2001 - COP 6 (Continued), Bonn, Germany
- 2001 - COP 7, Marrakech, Morocco
- 2002 - COP 8, New Delhi, India
- 2003 - COP 9, Milan, Italy
- 2004 - COP 10, Buenos Aires, Argentina
- 2005 - COP 11 Montreal, Canada
- 2006 - COP 12, Nairobi, Kenya
- 2007 - COP 13 Bali, Indonesia
- 2008 - COP 14, Poznań, Poland
- 2009 - COP 15, Copenhagen, Denmark
- 2010 - COP 16, Cancun.

Each year nations have meet in COPs to achieve a global solution to climate change and each COP for the most part continued to add small steps toward the goals of the UNFCCC. Yet in all COPs some nations have resisted calls from some of the most vulnerable nations to adopt a solution to climate change that would prevent dangerous climate change.

As the international community approached Cancun, no comprehensive global solution had been agreed to despite the fact that the original negotiations on the UNFCCC began in 1990 with a goal of achieving a

global climate change solution. For this reason, Cancun must be understood as the latest attempt in a twenty-year history of mostly failed attempts to structure a global solution to climate change.

The first major addition to the UNFCCC was the Kyoto Protocol which was negotiated in 1997 because the international community had been convinced by then by the emerging climate change science that developed nations needed to be bound by numerical emissions reductions targets. The Kyoto Protocol entered into force on February 16, 2005 and currently has 190 parties. The United States is the only developed country that never ratified the Kyoto Protocol.

Going into the Kyoto negotiations, the European Union proposed a comparatively strong target, requiring a 15 percent cut in greenhouse gas emissions below 1990 levels by the year 2010, while other industrialized states such as the United States and Australia proposed weaker targets, with Japan somewhere in the middle. (Bodansky, 2001) Ultimately the issue was resolved by specifying different emission targets for each party, ranging from an 8 percent reduction from 1990 levels for the European Union, to a 10 percent increase for Iceland. (Bodansky, 2001)

Under the Kyoto Protocol, the developed countries agreed to reduce their overall emissions of six greenhouse gases by an average of 5.2% below 1990 levels between 2008-2012. The developing countries had no binding emissions reductions obligations under Kyoto.

The Copenhagen negotiations in 2009 were necessary not only to expand the modest commitments made in the Kyoto Protocol but also because the emissions reductions obligations of developed countries set out in the Kyoto Protocol expire in 2012.

Kyoto was never understood as the final solution to climate change but only as a small initial step of developed nations to begin to take responsibility for climate change. As we have seen, the developed nations had agreed in the UNFCCC that they should take the lead in reducing the threat of climate change because they were mostly responsible for the build up of ghg in the atmosphere and Kyoto was understood to be a modest initial step toward a global solution. That is, Kyoto negotiators understood that a global solution would be negotiated later in future meetings of the UNFCCC parties. From the standpoint of some of the most vulnerable countries, including some of the small island developing states making up the organization AOSIS, Kyoto was not aggressive enough to prevent climate change threats to them.

At the COP-13 negotiations in Bali, Indonesia in 2007, parties to the UNFCCC agreed to replace the Kyoto Protocol with an agreement that would create a second commitment period under the UNFCCC and would include binding emis-

sions reductions for developed countries and new programs on adaptation for developing countries, deforestation, finance, technology transfer, and capacity building. This agreement was referred to as the Bali Roadmap, which also called for articulating a "shared vision for long-term cooperative action," including a long-term global goal for emission reductions. The original UNFCCC climate treaty had neither a quantified temperature limitation goal nor a ghg concentration atmospheric stabilization goal. In the Bali Roadmap the international community agreed to work on such a goal.

The Bali decision also recognized that developing countries could make contributions to solving the climate change through the development of Nationally Appropriate Mitigation Actions (NAMAs), meaning climate change strategies for developing countries. The NAMAs, however, would not constitute binding emissions reduction requirements for developing countries in contrast to the binding obligations of developed countries in the Kyoto Protocol that would be further developed and extended in Copenhagen.

Although some progress was made on a few issues in the two-year lead-up to Copenhagen, little progress was made on the major issues needed to define a global solution for climate change and particularly on legal commitments for GHG emissions reductions and funding for adaptation, deforestation programs, and technology transfer.

As Copenhagen approached, optimism about a Copenhagen deal faded although there was a short spurt of renewed hope several weeks before the conference started in December 2009 as the US, China, and a few other nations publicly made non-binding commitments on emissions reductions.

During the Copenhagen conference representatives from poor vulnerable nations begged developed countries to: (a) commit to reduce GHG emissions to levels necessary to prevent dangerous climate change; and (b) to fund adaptation programs in developing countries that are necessary to protect the most vulnerable from climate change impacts that could be avoided or compensate for the damages that could not be avoided.

Despite these pleas, not much happened during the Copenhagen conference to resolve the most contentious issues until US President Obama appeared on the morning of the last day, Friday, December 18, 2009. For much of that day, President Obama negotiated with Chinese premier Wen Jiabao, Brazilian president Luiz Inacio Lula da Silva, Indian Prime Minister Manmohan Singh and South African President Jacob Zuma (Lerer, 2009) Yet, a large part of this time was focused on a dispute between the United States and China on whether China would agree to monitoring and verification of Chinese climate change commitments.

President Obama could not commit to anything in Copenhagen that he knew he could not get through the US congress. Because a climate change bill that had passed the US House of Representatives was very weak compared to what science said was necessary to protect the world's poorest people, the United States took a position in the lead-up to Copenhagen that continued to be the weakest of all the developed countries' commitments on emissions reductions. The US could only commit to a 13% reduction below 2005, a 4% reduction below 1990 levels. Yet most scientists were asserting that the world needed to reduce ghg emissions by 25% to 40% reductions below 1990 levels to have any confidence that the international community would limit warming to 20 C, a level which was widely believed to trigger dangerous climate change.

Because none of the developed countries were willing to make emissions reduction commitments congruent with what scientific community said was necessary to protect them, some of the most vulnerable developing countries saw the developed countries' positions in Copenhagen as ominous, perhaps a death sentence.

President Obama personally negotiated the Copenhagen Accord during last hours of the conference. Yet, to get this deal, President Obama had to ignore many of the positions of the most vulnerable nations that were unresolved in the two negotiating documents that had been created in the lead-up to Copenhagen over two years. That is, for instance, among other things, the Copenhagen Accord failed to get commitments from the United States and some other developed countries to reduce ghg emissions at levels necessary to prevent serious climate change damage.

President Obama managed to get fairly wide spread support for the Copenhagen Accord on the last day of the Copenhagen negotiations despite the fact that the United States was not able to commit to emissions reductions at levels to prevent dangerous climate change. Politically President Obama's hands were tied in regard to his ability to commit to issues of interest to those nations most vulnerable to climate change because of domestic political constraints. Before Copenhagen, the US House of Representatives had passed a bill requiring a 17 percent reduction below 2005 levels by 2020 and this was a practical limitation on what the United States could commit to in international negotiations.

For domestic political reasons, the US President also wanted agreement from China and other large developing countries on transparent procedures for verifying their non-binding emissions reduction commitments.

Those opposing climate change legislation in the United States often have argued that it would be unfair to the United States if it was bound to reduce GHG emissions and China was not required to do the same. In fact, a decade earlier, when the Kyoto Accord was under consideration in the United States, opponents of the Kyoto deal frequently ran TV commercials that argued that the Kyoto Protocol was unfair to the United States because China was excluded from emissions limitations. This argument was often made without a critical comment in the United States even though the United States had committed itself to take the first steps to reduce emissions along with other developed countries under the UNFCCC.

Although President Obama originally negotiated the Copenhagen Accord with just four other countries, in the last few hours of the Copenhagen conference the United States successfully convinced most large emitting countries to support the Accord.

The Copenhagen Accords' most significant elements are:

- **Long-Term Goals:** The parties agreed that deep cuts in global emissions are required according to science and as documented by the IPCC Fourth Assessment Report, with a view to reducing global emissions in order to limit the increase in global temperature to below 2°C. The Accord also calls for an assessment of the implementation of the Accord to be completed by 2015 including examining whether the long-term goal should be a temperature rise of 1.5°C.
- **Adaptation:** The Copenhagen Accord states that adaptation to the adverse effects of climate change and the potential impacts of response measures is a challenge faced by all countries, and that enhanced action and international cooperation on adaptation are urgently required in developing countries, especially in the least developed countries, the small island states, and Africa. The parties to the Accord also agree that developed countries shall provide adequate, predictable and sustainable financial resources, technology and capacity building to support adaptation.
- **Financing For Poor Nations:** The Copenhagen Accord provides that developed countries shall set a goal of mobilizing jointly \$100 billion a year by 2020 to address the needs of developing countries and that the funds will come from a wide variety of sources, public and private, bilateral and multilateral. An annex carries the following short-term financing pledges from developed countries for 2010-2012: EU - \$10.6 billion. Japan - \$11 billion. United States - \$3.6 billion

- **Emissions Reductions:** The Copenhagen Accord provides for countries to voluntarily commit to GHG mitigation plans in two separate annexes, one for developed country targets and the other for the voluntary pledges of major developing countries. The developing countries may identify voluntary commitments. Neither developed nor developing country commitments under the Accord are legally binding.

- **Verification of Climate Change Promises.** A sticking point for a deal, largely because China refused to accept international controls, the Copenhagen Accord provides that emerging economies must monitor their efforts and report the results to the United Nations every two years, with some international checks to meet Western transparency concerns but “to ensure that national sovereignty is respected.”

- **Forest Protection.** The Copenhagen Accord “recognizes the importance of reducing emission from deforestation and forest degradation and the need to enhance removals or greenhouse gas emission by forests,” and agrees to provide “positive incentives” to fund such action with financial resources from the developed world.

For many the Copenhagen Accord was seen as a tragic failure because it failed to: (a) achieve once again enforceable ghg emissions reduction commitments from developed countries sufficient to prevent dangerous climate change, (b) identify dedicated sources of funding for adaptation or capacity building in vulnerable developing countries, or (c) stop the deforestation that is a major contributor to climate change.

Others saw Copenhagen as a success for achieving agreement on the long-term goals of the UNFCCC, new voluntary commitments from many developing countries, new levels of cooperation from China on verifying its voluntary emissions reductions commitments, and promises to mobilize significant amounts of money for adaptation in developing countries.

Yet, there was widespread agreement that the Copenhagen Accord did not constitute a comprehensive global solution to climate change particularly on binding emissions reduction commitments and funding for adaptation and preventing deforestation. At best Copenhagen had made a few positive steps foreword but deferred many of the toughest issues to Cancun and beyond.

Following Copenhagen, forty-two industrialized countries submitted quantified economy-wide emission targets for 2020. In addition, forty-three developing countries submitted nationally appropriate mitigation

actions. (UNEP, 2010) These pledges have since become the basis for analyzing the extent to which the global community is on track to meet long-term temperature goals as outlined in the Copenhagen Accord of 2°C.

The United Nations Environment program issued a report before Cancun analyzing whether the emissions reductions commitments submitted pursuant to the Copenhagen Accord would achieve the 2°C. (UNEP, 2010) UNEP concluded that if the highest ambitions of all countries associated with the Copenhagen Accord are implemented and supported, annual emissions of greenhouse gases could be cut, on average, by around 7 gigatons (Gt) of CO₂ equivalent by 2020. (UNEP, 2010)

Without this action, it is likely that a business-as-usual scenario would see emissions rise to an average of around 56 Gt of CO₂ equivalent by around 2020. Cuts in annual emissions to around 49 Gt of CO₂ equivalent would still however leave a gap of around 5 Gt compared with where we need to be—a gap equal to the total emissions of the world's cars, buses and trucks in 2005. (UNEP, 2010) That is because the experts estimate that emissions need to be around 44 Gt of CO₂ equivalent by 2020 to have a likely chance of pegging temperatures to 2° C or less. (UNEP, 2010), However, if only the lowest ambition pledges are implemented, and if no clear rules are set in the negotiations, emissions could be around 53 Gt of CO₂ equivalent in 2020—not that different from business as usual. (UNEP, 2010).

All of this set the stage for the Cancun negotiations and its agenda which was less ambitious than the Copenhagen agenda because most observers believed it would not be possible in Cancun to obtain the binding commitments on ghg reductions, dedicated funding for developing countries for capacity building and adaptation, and funding for forest protection identified in the Bali agreement in 2007. For these reasons, expectations for Cancun were very modest compared to hopes for Copenhagen the year before. In addition, many international climate change negotiation observers lost hope for increased commitments on ghg emissions reductions from the United States when conservatives won US elections in November of 2010, a month before the opening of the Cancun meeting.

3. The Cancun Agreements

COP-16 concluded in the early hours of December 11, 2010 at Moon Palace near Cancun Mexico with a few modest agreements on steps needed to structure a global approach to solving climate change. Among other things, negotiators agreed to:

3.1. Emissions Reductions Commitments of Developed and Developing Countries

The Cancun agreements made no changes to the magnitude of the voluntary emissions reductions commitments made pursuant to the Copenhagen Accord either for developed or developing countries. However, developed countries are urged under the Cancun agreements to increase the ambition of their targets "to a level consistent with" the latest recommendations of the Intergovernmental Panel on Climate Change (IPCC). In addition, developed countries are urged to prepare "low-carbon development strategies or plans," and encourage developing countries to do so as well but the Cancun agreements establish no process to further define them.

Under the Cancun agreements developing countries agreed to take "Nationally Appropriate Mitigation Actions (NAMAs), supported by technology and finance, "aimed at achieving a deviation in emissions relative to 'business as usual' emissions in 2020. The Cancun agreements also call for workshops to clarify the assumptions behind countries' mitigation pledges and, in the case of developed countries, to consider ways to increase their level of ambition. It also establishes a two-part "registry." In the first part, intended to facilitate matching of developing country actions with support, developing countries can list proposed actions in need of support, and developed countries can list support available or provided. The second part will record all developing country NAMAs -whether supported or unsupported.

The Cancun agreements extended negotiations designed to ensure that there is no gap between the first and second commitment periods under the UNFCCC until the next COP in Durban South Africa. In this way, the Cancun agreements keep hope alive that the UNCCC goal of achieving legally binding emissions reduction targets will be achieved in future negotiations although it establishes no legally-binding emissions reduction commitments.

As we have seen, each year the tough issues have been postponed, the stronger national commitments must be to prevent dangerous climate change. When climate change negotiations began in 1990, the CO₂ atmospheric concentration was approximately 350 ppm but as the international community concluded the Cancun meeting, CO₂ atmospheric concentrations were almost 390 ppm. Each year of waiting has made the achievement of safe atmospheric ghg concentration stabilization goals more difficult.

3.2. Long-Term Goal Of UNFCCC On A Warming Limit.

Like the Copenhagen Accord, the Cancun agreements set a goal of limiting average global warming to below 2°C above pre-industrial levels, and call for periodic review to consider strengthening this long-term

goal, including to 1.5 degrees. The first review is to begin in 2013 and conclude by 2015. At COP 17 in Durban South Africa, the parties will again consider setting a time-frame for the peaking of global emissions and a global emissions goal for 2050. Like Copenhagen, the Cancun agreements set no ghg atmospheric stabilization goal.

3.3. Measurement, Reporting and Verification (MRV) Under the UNFCCC

To strengthen the measurement, reporting and verification (MRV) of mitigation actions and support for developing countries, the Cancun agreements call for:

- More detailed reporting, in the national communications of both developed and developing countries, of mitigation actions and support provided or received;
- In the case of developing countries, guidelines for international MRV of mitigation actions receiving international support, and "general" guidelines for domestic MRV of autonomous actions; and
- New biennial reports by developed countries on their progress in reducing emissions and support provided; and by developing countries on their greenhouse gas (GHG) inventories, mitigation actions, needs and support received. (Developed countries already submit annual GHG inventories.)

In addition, the Cancun agreements establish a new processes within the Subsidiary Body on Implementation (SBI) to consider parties' mitigation efforts - called "international assessments" for developed countries, and "international consultations and analysis," a phrase from the Copenhagen Accord, for developing countries. In the latter case, the decision specifies that the process: be "non-intrusive, non-punitive, and respectful of national sovereignty;" focus on unsupported actions; not consider the "appropriateness" of a country's domestic policies; include an analysis by technical experts; and result in a summary report.

3.4. Finance for Developing Countries for Their Obligations under the UNFCCC

The Cancun agreements incorporate the finance goals set out in the Copenhagen Accord - a collective commitment by developed countries to provide \$30 billion in fast-start finance for developing countries in 2010-12; and to mobilize \$100 billion a year in public and private finance by 2020 "in the context of meaningful mitigation actions and transparency on implementation." As in Copenhagen, no dedicated sources of funding were identified outside some non-binding pledges made by some countries.

The Cancun agreements establish a Green Climate Fund operating under the "guidance" of, and accountable to, the Conference of the Parties (COP). The fund is to be governed by a 24-member board with equal representation from developed and developing countries, and supported by an independent secretariat. The World Bank was designated as its interim trustee, subject to a review three years after the fund begins operations. The design of the fund was delegated to a 40-member Transitional Committee (15 members from developed countries, and 25 from developing), which will be convened initially by the UNFCCC secretariat and is to submit its recommendations at COP 17.

3.5. Adaptation

The Cancun agreements establish the Cancun Adaptation Framework to enhance adaptation efforts by all countries; a process to help least developed countries (LDCs) to develop and implement national adaptation plans; and an Adaptation Committee to provide technical support to parties, facilitate sharing of information and best practices, and advise the COP on adaptation-related matters. The Cancun agreements require that the SBI committee referenced above make recommendations on the composition and functions of the Adaptation Committee, for adoption at COP 17.

The Cancun agreements also establish a work program to consider "approaches to address loss and damage associated with climate change in ... particularly vulnerable" developing countries, including a climate insurance facility and other options for risk-sharing, with recommendations due at COP 18.

3.6. Reducing Emissions from Deforestation and Forest Degradation (REDD+)

The Cancun agreements outline a phased approach to strengthening efforts by developing countries to reduce emissions from deforestation and other forestry-related activities, starting with the development of national strategies and "evolving into results-based actions that should be fully measured, reported, and verified."

The Cancun agreements call on developing countries planning to undertake such efforts to develop: a national strategy or action plan; a national forest or forest emission reference level; and a transparent national system for monitoring and reporting of conservation and emission-reduction efforts. Countries also are to follow safeguards ensuring, for instance, the full participation of indigenous peoples, local communities and other stakeholders.

The Cancun agreements were unable to resolve related REDD finance issues - in particular, any role for market-based finance. The Cancun agreements called for nations to make financing recommendations on REDD financing at COP 17 in Durbin.

3.7. Technology Development and Transfer

The Cancun agreements establish a Technology Mechanism comprised of a Technology Executive Committee and a Climate Technology Centre and Network.

The 20-member Committee will be comprised of experts nominated by parties and appointed by the COP. Its roles will include assessing technological needs and issues; recommending actions to promote technology development and transfer; and promoting collaboration among governments, the private sector and others.

4. Ethical Analysis of Cancun Accord.

In examining previous COPs, Climate Ethics has proposed ethical criteria that any proposed post-Kyoto regime must meet at a minimum. (Brown, 2009a) That is any post-Kyoto regime must:

- Require sufficient greenhouse emissions reductions to assure that the international community is on a greenhouse gas emissions reduction pathway that will prevent dangerous climate change harm. This is sometimes referred to as the environmental sufficiency criteria.
- Begin to base differences among national allocations on the basis of equity and justice. This is sometimes referred to as the equity criteria.
- Assure that those responsible for climate change provide adequate, predictable adaptation funding to enable developing countries and in particular the most vulnerable developing countries to do what is necessary to avoid climate change damages in cases where it is possible to take action and to prevent damages, or be compensated for climate change damages in cases where it is impossible to take protective action. We will refer to this as the just adaptation criteria.

Although these three criteria, that is environmental sufficiency, equity, and just adaptation constitute the minimum ethical considerations that any climate regime must satisfy, they don't capture all ethical questions raised by any proposed climate change regime. There are numerous other ethical questions raised by any proposed climate change

regimes that go beyond these minimum requirements including issues of fair process, gender issues in policy formation, obligations of sub-national governments, organizations, businesses, and individuals for climate change, human rights issues relating to climate change and many more. This post, however, will evaluate Cancun agreements in light of the three minimum criteria.

4.1. Environmental Sufficiency Criteria

As we have seen the Cancun agreements fail to modify the inadequate voluntary commitments on ghg emissions reductions made pursuant to the Copenhagen Accord. Not only does the Cancun agreements fail to require sufficient ghg emissions reductions to assure that the international community is on a ghg emissions reduction pathway that will prevent dangerous climate change, the emissions reductions commitments that have been identified under the Cancun agreements almost guarantee that millions of poor people, plants, animals, and ecosystems will be harmed by climate change. As we have seen above, the commitments made according to the Copenhagen Accord and Cancun agreements that have been ratified by the Cancun agreements leave at the very minimum a 5Gt gap between emissions levels that will be achieved if there is full compliance with the voluntary emissions reductions and what is necessary to prevent 2°C rise, a warming amount that most scientists believe could cause very dangerous climate change.

In fact, a report issued by the Royal Society shortly before the Cancun meeting started in late November concluded that there is now little to no chance of maintaining the rise in global surface temperature below 2°C, despite repeated high-level statements to the contrary. (Anderson and Bows, 2010) That is, although it is still possible that nations in the next few years will revise upward their ghg emissions reductions commitments to levels that will protect the most vulnerable people and countries, the most recent science has concluded that the world is running out of time to do this. And so, those most responsible for climate change have failed under the Cancun agreements to assume responsibility to prevent dangerous climate change- extending a twenty year record of failure in so doing.

As we have seen, the Cancun agreements adopt the Copenhagen Accord target that nations should work together to limit human caused additional heating to 2°C. There are, however, several ethical problems with this target. They include the following:

- Any additional warming from current levels is ethically problematic because current temperatures are already dangerous for some vulnerable people around the world and an additional 1 °C temperature

rise is already locked in by prior emissions. Because any additional warming from current levels could have serious consequences to those most vulnerable to climate change, those who are most vulnerable should have as a matter of procedural justice rights to consent to put at risk by the additional 2°C goal adopted in the Accord.

- There is substantial scientific evidence that even the 1.5 °C temperature limit would not be sufficient to protect those most vulnerable to climate change. For instance, a recent paper by Jim Hansen and seven other authors concluded that additional warming should be limited to 1°C warming and to do this existing atmospheric concentrations of CO₂ must not only not be allowed to rise the small amount to 450 ppm of carbon equivalent but must be reduced from existing levels of 385 ppm to 350 ppm CO₂. (Hansen et al 2008) According to this paper, the world has likely already shot past the level of atmospheric concentrations that will lead to dangerous climate change for many. Under this view, the world has already used up all of the assimilative capacity of the atmosphere and biosphere that has been available to buffer against dangerous climate change. Given this, a strong ethical argument can be made that all nations have a duty to try to prevent additional warming of almost any amount, while the Cancun agreements legitimize an additional 2°C warming. Given that the Cancun agreement can also be understood to legitimize any national ghg emissions target that is proposed voluntarily, even if it is insufficient to achieve the 2°C temperature limit goal adopted by the Accord, let alone the duty to try and prevent any additional warming, the Cancun agreements can be seen as ethically problematic. Given that a case can be made that current levels atmospheric ghg concentrations are already harming or putting people and ecosystems at risk, it is difficult to make an ethically acceptable case that atmospheric ghg concentration targets higher than current levels are justified unless consent is given by those who are already being harmed by warming or full compensation is made to those who through no fault of their own are harmed by climate change. Yet the Cancun agreements assume that an additional 2°C warming backed by commitments that will not limit additional warming are acceptable.

We have also seen that the United States approached negotiations in Cancun as if the United States need not make emissions reductions commitments unless it could secure commitments to reduce GHG emissions from high-emitting developing countries including China. Yet, as we have demonstrated in Climate Ethics before, no nation may deny its duty to reduce its emissions to its fair share of safe global emissions

on the basis that others who are contributing to the harm have failed to cease harmful behaviour. (Brown, 2009b) This is so because no nation or person has a right to continue destructive behaviour on the basis that others who are contributing to the harm have not ceased their destructive behaviour.

And so, if some nations are not willing to reduce their emissions to levels consistent with what justice requires of them, no nation, including the United States, can refuse to reduce its emissions to its fair share of safe global emissions levels on the basis that others won't act.

Although the United States is well within its rights to obtain promises of other nations to contribute to solving the climate change problem, it may not as a matter of ethics condition its willingness to reduce its emissions to levels required by justice of it on other nations' behavior. That is, although it may be in everyone's interest if the United States encourages others to make ghg emissions reductions commitments, the United States may not refuse to reduce its emissions to its fair share of safe global emissions on the basis that others have not acted. The United States could ethically link non-obligatory climate change actions on other's participation in climate change solutions but must agree to do what ethics requires of it in reducing emissions without regard to the actions of others.

Because almost twenty percent of global emissions are coming from deforestation, finding ways to limit deforestation such as through REDD is a necessary element in the global deal to reduce ghg emissions to acceptable levels. Although some progress on REDD was made in Cancun, many of the difficult decisions on deforestation have been deferred to COP-17 in Durban and beyond particularly on financing. Yet there are many important ethical questions that go beyond this post raised by the REDD architecture but which will be faced in Durban next year.

Therefore, from the standpoint of the environmental sufficiency goal, the Cancun agreements fail to satisfy the requirement that any post-Kyoto regime must assure that the international community is on a ghg emissions reduction pathway that will prevent dangerous climate change harms.

4.2. Equity Criteria

The second minimum ethical criteria that all post-Kyoto proposals must meet is the requirement that national emissions reduction proposals must be consistent with what "equity" and "justice" demands of nations. That is, equity requires that each nation reduce its emissions to its fair share of safe global emissions. And so, each nation's emissions

reduction levels should be based upon what distributive and retributive justice demands, not on national self-interest. Although there are different theories of distributive justice that lead to different national allocations, many justifications for national ghg emissions allocations fail to satisfy any ethical scrutiny. In other words, it is not necessary to know what perfect justice requires to conclude that some voluntary proposals for national ghg allocations under Copenhagen and Cancun are unjust. One such common approach to national ghg emissions reductions commitments that fails to satisfy any ethical scrutiny is the claim that all nations must reduce emissions by the same amount without regard to whether a nation is a large or small contributor to the climate change problem, an approach often referred to as 'grandfathering' or equal reductions from existing emissions levels. It would appear that some of the national commitments that are referenced in the Cancun agreements are based upon grandfathering emissions reductions from existing levels not on what justice requires of nations.

Since most nations entered the Copenhagen and Cancun negotiations as if national interest rather than global responsibility to others was an adequate basis for national climate change policies, the commitments made under the Copenhagen Accord and Cancun agreements fail to satisfy equity criteria. In fact, in the lead-up to Copenhagen, most of the justifications for national commitments that had been announced by countries to reduce their emissions were exclusively focused on whether they met global goals to reduce GHG emissions unadjusted by equity considerations.

There have been several proposals discussed by the international community about second commitment period frameworks that would expressly incorporate equity into future ghg emissions reductions pathways. Two such frameworks are known as "Contraction and Convergence" (C&C, 2009) and "Greenhouse Development Rights" (GDR) (Bear and Athanasiou, 2009) frameworks. In the lead-up to Copenhagen, all major GHG emitting nations ignored the C&C or GDR frameworks or any other comprehensive framework that took equity into account. In fact, the Copenhagen Accord and the Cancun agreements allowed each nation to identify its emissions reduction commitment based upon voluntary national considerations without regard to equity.

Therefore, the Cancun agreements are a failure in satisfying the equity criteria.

4.3. Just Adaptation Criteria

The third minimum ethical criteria for judging any second commitment period under the UNFCCC is that it must provide adequate funding to

support adaptation programs in developing countries given that some developing countries have done nothing to cause climate change and must take steps to avoid harsh impacts.

The Cancun agreement did manage to create an adaptation framework to enhance adaptation efforts by all countries; a process to help least developed countries (LDCs) to develop and implement national adaptation. Yet Cancun failed to identify dedicated sources of funding to implement an adaptation agenda that is based upon "mandatory" contributions to "new, predictable, and additional sources of funding." Although progress was made on adaptation in Cancun, the Cancun agreements defer many of the tougher issues to COP-17 and beyond particularly on funding issues. Therefore the Cancun agreements fail to satisfy the ethical criteria for adequate funding for adaptation.

5. Conclusions-Climate Change Ethics after Copenhagen

We would agree that some issues agreed to in Cancun fill in some of the missing architecture needed for a global solution to climate change. In addition, the Cancun agreements correct a few significant limitations of the Copenhagen Accords and in accomplishing this, the Cancun decisions keep hope alive for a legally binding international climate change regime.

Yet, declaring Cancun a success without viewing Cancun's limitations in the context of the increasingly difficult challenges entailed by further delay on a global climate change solution is to invite serious misjudgment about the nature of hope that can be justified by Cancun. From the standpoint of the twenty-year negotiations, Cancun was another failed attempt to forge a global solution to climate change, a failure that must be understood as an ethical failure of the those nations most responsible for climate change.

The Cancun agreements are ethically problematic for reasons stated in this post among other reasons. In summary, the commitments made by nations under the Cancun agreements are not environmentally sufficient, distributively just, nor provide for just adaptation responses for vulnerable developing countries.

The next climate change negotiations will take place in Durban South Africa late in 2011. Although it is possible that developed nations will take more ethically responsible positions on an urgently needed global climate change solution, the world is running out of time to do this according to the consensus scientific view. The longer the world waits to reduce its ghg emissions, the more expensive will be the adaptation agenda and the steeper emissions reductions commitments will be

needed to protect vulnerable developing countries and poor people around the world. Each failure to develop a global solution to a climate change regime will make it more difficult to forge a just climate change regime.

From the standpoint of ethics, Cancun was another failure of those responsible for causing climate change to agree to do what ethics and justice require of them.

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