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## How to Proceed After Copenhagen

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### Introduction

In 2007, the Nobel Peace Prize was awarded to the *Intergovernmental Panel on Climate Change* (IPCC), the global body responsible for scientific assessment of climate change, and Al Gore, the panel's most renowned campaigner. With this decision, the Norwegian Nobel Committee highlighted the link between the risk of accelerating climate change and the risk of violent conflict and wars (Smith, 2007). Climate change was also among the justifications for awarding the same prize to US President Barack Obama two years later (Smith, 2009). In his Nobel lecture, President Obama stated that the world must come together to confront climate change: "There is little scientific dispute that if we do nothing, we will face more drought, more famine, more mass displacement – all of which will fuel more conflict for decades" (Obama, 2009a).

The election of Barack Obama as the President of the United States had raised high hopes for a comprehensive new climate treaty to succeed the *Kyoto Protocol* expiring in 2012. This hope was reinforced in July, 2009 at the G8 Summit in L'Aquila where the G8 leaders, including President Obama, recognized the scientific view on the need to keep global temperature rise below two degrees Celsius above preindustrial levels (G8 Leaders Declaration, 2009).

A strong commitment by the United States would remove the major excuse for China not to move ahead. China's President Hu Jintao had recently reaffirmed that they will not commit to mandatory emissions-reduction targets before the world's wealthy countries take the lead in addressing global climate change. The stakes were raised in mid September 2009, as Prime Minister Vladimir Putin said that Russia would reject any new climate change agreement that imposed restrictions on Russia but not bind other big polluters (McBride, 2009).

The UN summit on climate change in New York on September 22, 2009 did not provide the much hoped breakthrough; neither President Hu Jintao (2009) or President Barack Obama (2009b) provided any binding commitments to emission reductions in their much awaited speeches. The outcome of the Bangkok negotiations in the beginning of October was also disappointingly meager. The negotiators managed to cut the draft text roughly in half, but they could not move forward on the most significant issues such as finance commitments and emission reduction targets.

All of the major questions remained unaddressed when the *UN Climate Change Conference* (COP15) started in Copenhagen on December 7, 2009. Unrealistic or not, there were still high hopes for the culmination of a two-year intensive negotiating process with a comprehensive and legally binding treaty. Otherwise,

more than 40,000 people would hardly have applied for accreditation at the conference, while up to 100,000 took part in a mass demonstration in the streets of Copenhagen in support of strong action against climate change. The expectations were soon lowered, as much of the first week was mostly used to negotiate about how to negotiate. No treaty was in sight when the second segment started at the end of the second week with close to 115 world leaders attending.

In the end, what we got out of the conference was a loosely formulated three page long unofficial document – the *Copenhagen Accord* (2009) – hammered out between a few large countries during the last night. Compared to the expectations at the beginning of the conference this leaflet was a disappointment. However, it can be argued that it was the best that could be achieved. It did include a 2°C target, and even a reference to the possibility of limiting temperature increase to below 1.5°C advocated by Small Island Developing States fearing drowning. However, we did not get a new international agreement on climate change with legally binding emission reduction targets to follow the Kyoto Protocol.

One of the major reasons for the meager results of the Copenhagen conference is that it tried to solve several questions simultaneously, severely limiting resolutions and solutions. In concordance with this argument, my proposal on how to proceed with climate negotiations splits the negotiation process into separate blocks. I argue that splitting continued negotiations into two separate blocks could both save time, and make it more likely to ultimately reach an all inclusive comprehensive climate treaty. The first block would deal with historical emissions including a mutual debt cancellation, and the second block would deal with present and future emissions, and how to finance the adaption to the consequences of these emissions.

### **Historical emissions**

Developing countries are righteously pointing to the main reason for a warming climate: historical *greenhouse gas* emissions of developed countries. Settling this *carbon debt* of the developed world would take away excuses for developing countries not to participate in a climate treaty.

According to an estimate made by Simms, Robins and Meyer (1999), G7-countries are running up *carbon debts* in economic efficiency terms of around \$13 trillion each year, while the group of highly indebted poor countries is running up credits of \$141 to \$612 billion. This debt is calculated by how much of the G7-countries' gross domestic product is produced through the use of fossil fuels in excess of an equitable global per capita allotment of carbon emissions.

A more modest estimate of the carbon debt is presented by Raina (2002). With a price tag between ten and twenty U.S. dollars per tonnes of excess emissions, he proposes a G7 yearly carbon debt between \$15 and \$30 billion a year, and for all Northern industrial countries between \$30 and \$60 billion. Most recently

Ragueneau (2009) estimated that the carbon debt of industrialized countries accumulated since the beginning of the fossil fuel driven industrial revolution equals the total external debt of developing countries (\$ 2,860 billion vs. \$ 2,850 billion).

It can though be argued that developed countries have no moral responsibility for greenhouse gas emissions before climate change was considered a problem (Vanderheiden, 2008). But then we stumble into the question of what date should be the appropriate cut-off point. Swedish chemist Svante Arrhenius (1859-1927) is often mentioned as the first one who warned about global warming as a consequence of increased atmospheric concentration of carbon dioxide. Arrhenius (1896) calculated that a doubling of CO<sub>2</sub> in the atmosphere would increase global surface temperature by an average of five to six Celsius degrees. He did not, however, consider this a problem. On the contrary, Arrhenius (1908) looked forward to better climates and abundant crops to the benefit of rapidly propagating mankind. So this could hardly be the appropriate cut off point.

To the author knowledge Canadian physicist Gilbert Plass (1956a) was the first scientist to warn that a warming climate could be something to worry about. In a series of articles published in 1956, he estimated that if the carbon dioxide content of the atmosphere doubles, the surface temperature will rise by 3.6 Celsius degrees. Contrary to his predecessors, Plass (1956b) regarded this as a problem arguing that "the temperature from this cause may be so large in several centuries that it will present a serious problem to future generations". Next year Roger Revelle and Hans E. Suess (1957) hardened the tone of the warning, stating that the present rate of combustion of fossil fuels presents "a large scale geophysical experiment of a kind that could not have happened in the past nor be reproduced in the future."

The publication of the so called *Keeling-curve* in 1960 might be a more appropriate cut-off point, as it was the first measured evidence for rising levels of carbon dioxide. Another possible cut-off point could be in 1979, when the first *World Climate Conference* appealed to the nations of the world "to foresee and to prevent potential man-made changes in climate that might be adverse to the well-being of humanity". Yet another could be 1990, when the Intergovernmental Panel on Climate Change stated in its First Assessment Report that the threat of climate change was real, and a global treaty was needed to deal with it (IPCC, 2004). Vanderheiden (2008) proposes the latest one as the most defensible starting point arguing that: "By then, most national governments were fully aware of the likely effects of various kinds of human activity on global climate and could have initiated emission abatement programs..." (p. 190).

Can ignorance be a defensible reason for the lack of moral responsibility? Modifying the polluter-pays principle, Shue (1999) claims that "if whoever makes a mess receives the benefits and does not pay the costs, not only does he have no incentive to avoid making as many messes as he likes, but he is also unfair to whoever does pay the costs" (p. 535).

We could also consider developed countries use of fossil fuels in excess of an equitable global per capita allotment of carbon emissions as a conventional loan. A loan that has financed the carbon led growth of developed countries since the industrial revolution. If developed countries default on this loan, why should developing countries have any responsibility for paying their loans either?

This mutual indebtedness, developed countries carbon debts vs. developing countries conventional monetary debts, provides an opportunity to settle the scores, and start from a clean table. Considering this mutual debt, developing countries joining a global climate treaty should get their debt cancelled. As a bonus, cancelling the debts would help to restore the crumbling banking system by cleaning the assets from unserviceable loans.

### **A fair emission quota**

Mutual debt annulations would clean the table for negotiations about how to cope with future emissions. This can be split into two separate blocks. In the first block a sustainable emission level and a fair distribution of it has to be defined, and in the second block what to do with emissions above this sustainable level must be established. A sustainable emission level can be defined as an emission level that would not cause any further climate warming. I leave it to climate scientist to define the exact level, as the purpose of this article is only to provide a suggestion for a general framework for continuing climate negotiations.

Intuitively it sounds clear that the sustainable emissions level has to be divided equally among all humans. Following a Rawlsian approach, we might argue that a different division would be to the greatest benefit of the least advantaged (Rawls 1971, Kunnas 2009). An overdraft, at least for a transition period could perhaps be justifiable, if countries emitting over their fair quota would pay for their excess emissions. By selling emission quotas to countries needing additional quotas, countries emitting greenhouse gases below their quota of the sustainable emissions could raise money to be used to finance vital investments in human capital and infrastructure, like schooling, health care or clean water. One way of collecting these funds is explained below.

### **Towards a sustainable emission level**

The last block dealing with emissions above sustainable levels starts by a decision of an emission path from present emission levels to the sustainable level. The gentler the slope the longer it would take to reach the sustainable emission level and the more additional warming we commit the planet to.

The projected distribution of economic impacts of climate change is such that it would increase the disparity in well-being between developed countries and developing countries, with disparity growing for higher projected temperature increases. The highest human costs will be borne by the poorest, as they have less capacity to adapt, and are more vulnerable to climate change damage. Even in

regions with higher adaptive capacity, such as North America, Australia, New Zealand and the Nordic Countries there are vulnerable communities, such as indigenous peoples (IPCC, 2007; Arctic Climate Assessment, 2007).

Thus, we need to accompany the design of an emission path towards sustainable emission, with a system to collect funds for the needs of adaptation to the adverse impacts from climate change. Following the 'polluter pays' principle, the funds should be collected in proportion to the responsibility for proceeding climate change and redistributed in proportion to the needs for adaptation. The total amount of funds needed depends on the additional warming and adaptation costs the chosen emission path would lead to. The payment for each unit of greenhouse gases emitted can be calculated by dividing the best available estimate of the total adaptation fund needed by the total emissions above the sustainable level under the chosen emission path.

Countries that consider their payments to the damage fund as too large, can strive for a deeper and faster emission reduction path decreasing both total global emissions, and their respective share of emissions.

The effectiveness of the system could be enhanced if the funds collected for adaptation needs in the long-run were invested in the development of climate friendly energy technology in the short-run. By making new energy technology available, it would also make reaching the emission goals cheaper thus lowering the threshold for lower emission targets.

## **Conclusions**

This paper proposed a two-step approach for climate negotiations. Splitting continued negotiations into two separate blocks could save time, and make the world more likely to reach an all inclusive comprehensive climate treaty. The first block would deal with historical emissions including a mutual debt cancellation, while the second would deal with future emissions and how to finance adaptation to climate change.

Considering the mutual indebtedness, developed countries carbon debts vs. developing countries conventional monetary debts, developing countries joining a global climate treaty should get their external debts cancelled. Such debt settlement would be a strong motivation for developing countries to join a climate treaty, and would also take away their strongest excuse not to participate in a climate treaty; their righteous appeal that the main reason for climate change is the historical *greenhouse gas* emissions of developed countries.

Finally, we need an agreement of an emission path from present emission levels to sustainable levels. The gentler the slope, the more additional warming we commit the planet to. The highest human costs of this will be borne by the poorest, as they have less capacity to adapt and are more vulnerable to climate change. Thus, we need a system to collect funds for the needs of adaptation to the adverse impacts from climate change. The funds should be collected in proportion to the

responsibility for proceeding climate change, and redistributed in proportion to the needs for adaption.

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